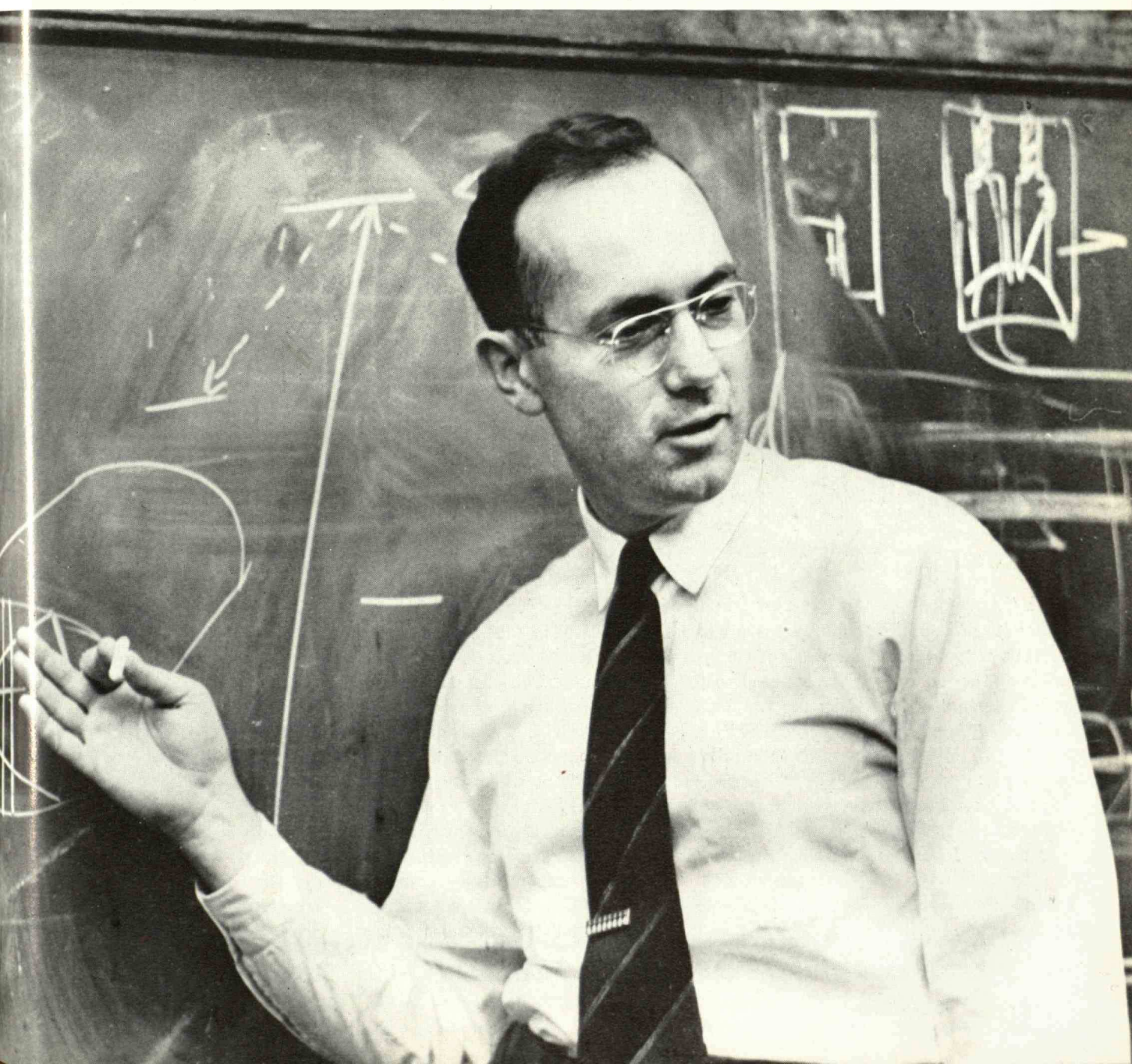


# Technology Review

Edited at the Massachusetts Institute of Technology

January, 1963

Useful Knowledge . . . by Charles H. Townes . . . Page 9



# technology review

Published by MIT

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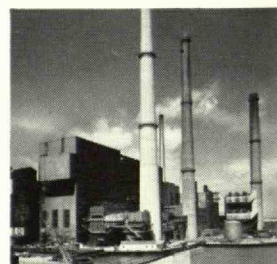
*Artist's rendition of a hot air damper used in a large C-E steam generator.*

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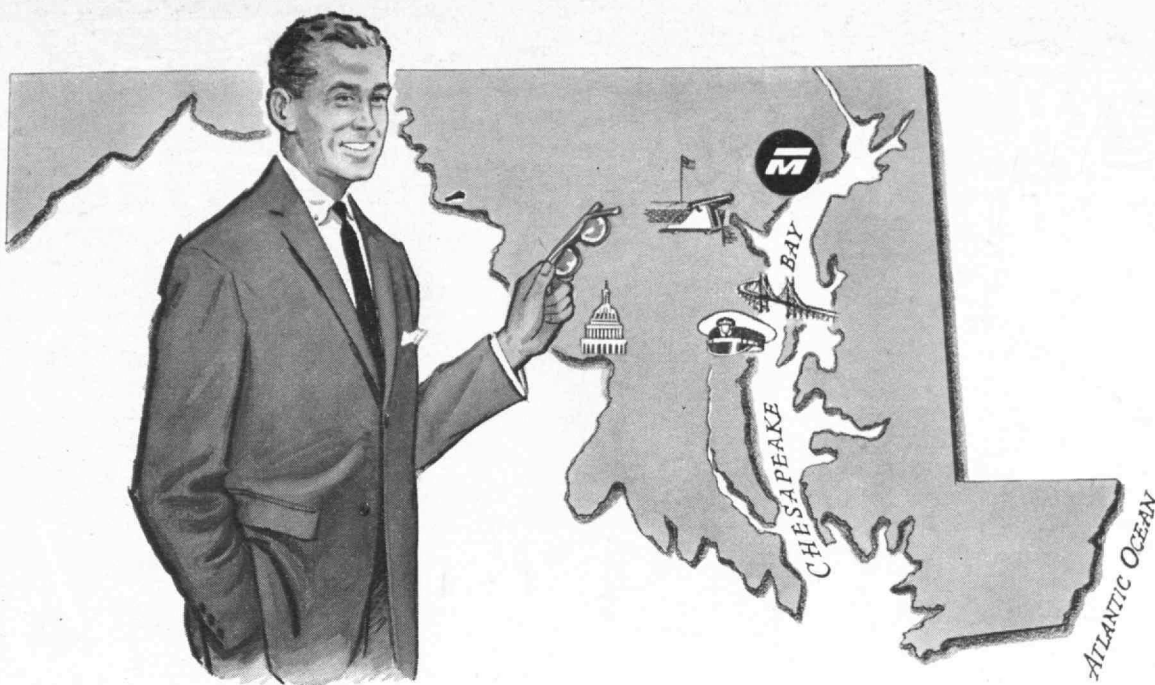


*The Waukegan plant of Commonwealth Edison Co. houses the 340,000 kw unit which contains the damper illustrated above. In the last ten years, Commonwealth Edison has purchased ten C-E Controlled Circulation Steam Generators for use in six of its stations.*



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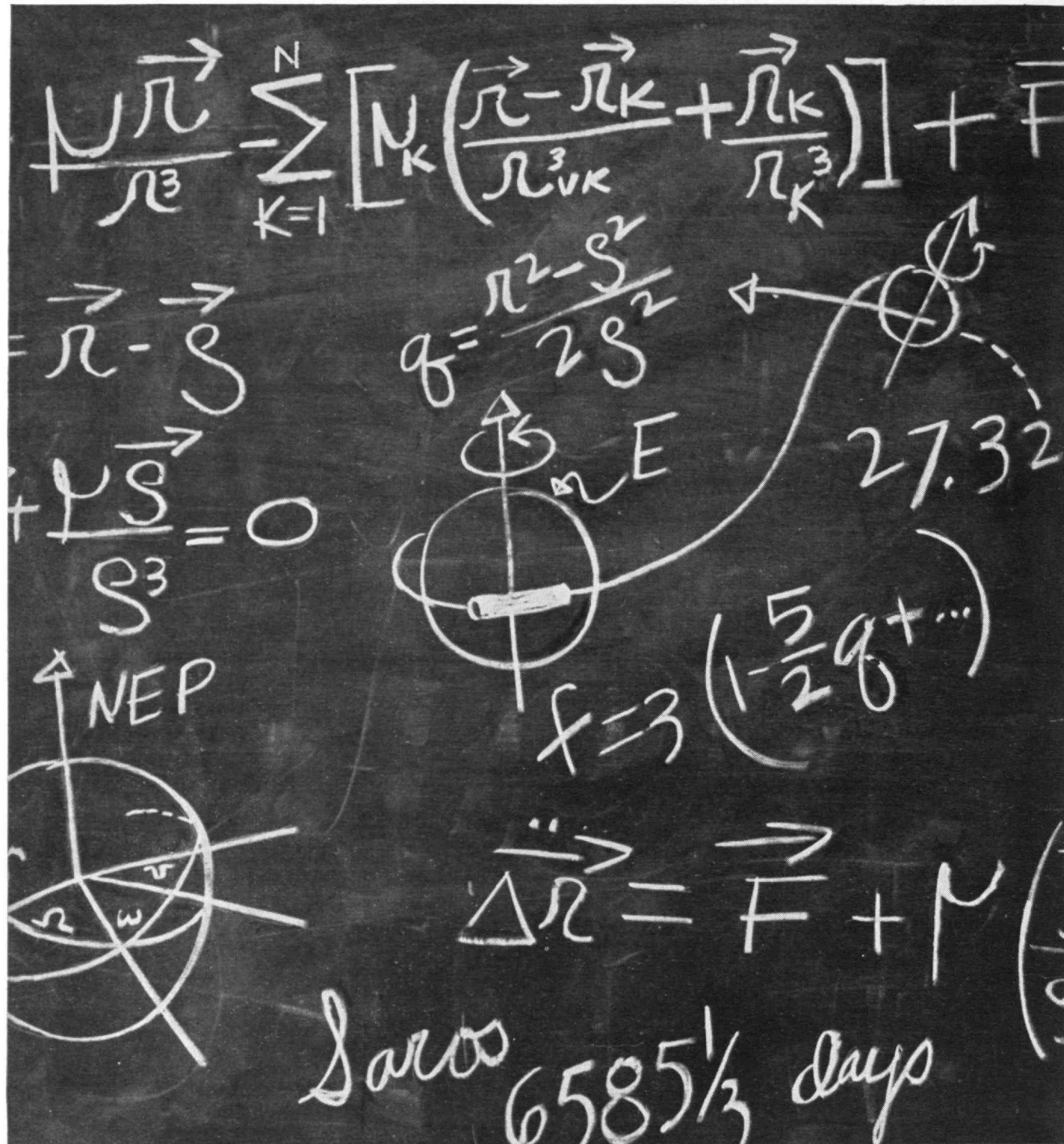
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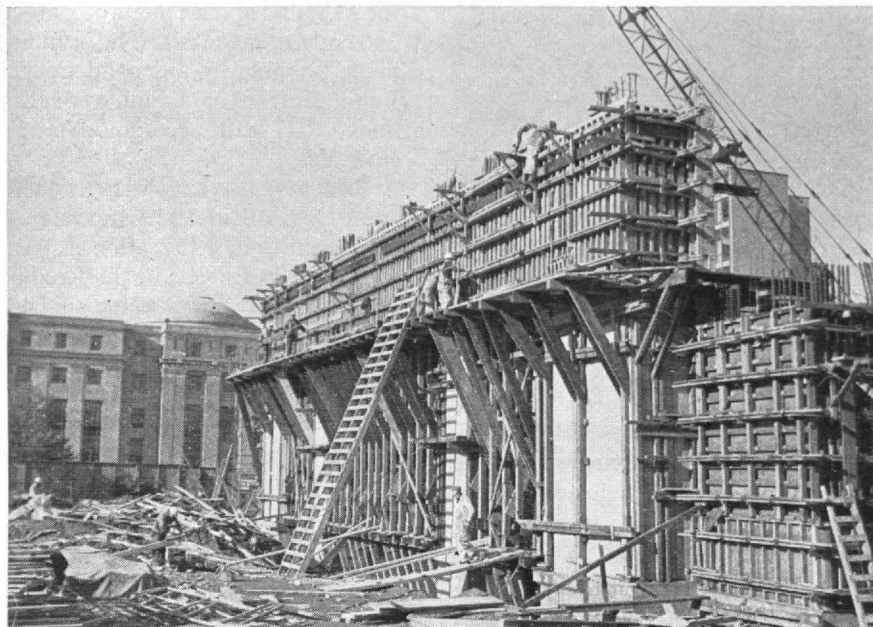
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**CONSTRUCTION WORK** surrounds M.I.T. students this year. This photo by Bob Lyon is of the Earth Sciences Center. Soon the Materials Center will be going up in the main parking lot; a model of it is shown on page 13.

TECHNOLOGY REVIEW is published monthly from November to July inclusive, on the 27th day of the month preceding the date of issue, by the Alumni Association of the Massachusetts Institute of Technology. All correspondence regarding its editorial contents, subscriptions, advertising, and changes of address should be addressed to:

Room 1-281, M.I.T.,  
Cambridge 39, Mass.

The Review's publisher and editor is *Volta Torrey*; business manager, *R. T. Jope*, '28; assistant to the editor, *Ruth King*; and class news editor, *Roberta A. Clark*. Editorial consultants are *J. J. Rowlands*, *Francis E. Wylie*, and *John I. Mattill*. Members of its staff are *Madeline R. McCormick*, *Patricia Fletcher*, and *Maxine Kenny*.

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*L. Wilson*, '32, and *F. Leroy Foster*, '25, Vice-presidents; and *Frederick G. Lehmann*, '51, Secretary.

An annual subscription to Technology Review is \$4 in the U.S., \$4.50 in Canada and elsewhere, and a single copy, 60 cents. Three weeks must be allowed to effect a change of address, for which both the old and the new address of the subscriber should be given.

Contents are copyrighted, 1962, by the Alumni Association of M.I.T. Requests to reprint material from The Review should be addressed to the editor, Room 1-281, M.I.T.

The office of publication is 10 Ferry St., Concord, N.H., where The Review is printed by The Rumford Press. Second-class postage is paid at Concord, N.H.

POSTMASTER: Please return undeliverable copies to The Rumford Press, 10 Ferry St., Concord, N.H.

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Bob Lyon took pictures on pages 13 and 14; Percy Lund produced the drawing on page 21; and Robert C. Cowen, '49, the photo at top of page 23.

# Individuals Noteworthy

## Metallurgists' Head

THOMAS B. KING, a member of M.I.T.'s Faculty since 1953, has been made head of the Department of Metallurgy. Born in Scotland in 1923, he was educated at the University of Glasgow, associated with the Clyde Alloy Steel Company, and a lecturer at the Royal College of Science and Technology in Glasgow before coming to the United States. He became an assistant professor at M.I.T. in 1953, associate professor in 1957, and professor of metallurgy in 1961.

Dr. King has been concerned with the thermodynamics and kinetics of high-temperature systems encountered in chemical engineering. He has contributed to the *Transactions of the Metallurgical Society of the A.I.M.E.* and other publications, and is now co-authoring a textbook on metallurgical engineering. He is a member of several technical societies and attended conferences on steelmaking in the Soviet Union in 1959 and 1961.

## In Mechanical Engineering

RONALD F. PROBSTEN, an authority on theoretical fluid mechanics, has been appointed professor of mechanical engineering. Graduated from New York University in 1948, he continued his studies at Prince-



Professor Ronald F. Probsteen was an already widely known newcomer to M.I.T.'s Faculty last fall.



Robert Allan Smith is the director of the new Center for Materials Science and Engineering (see page 12).

ton, and comes to M.I.T. from Brown University, where he has been professor of engineering since 1959.

Professor Probsteen developed new undergraduate courses in fluid mechanics, gas dynamics, supersonic flow, and classical physics at Brown, and in addition to his teaching directed the ARPA program on re-entry physics and a USAF program on hypersonic and rarefied flow research. He spent the 1960-1961 academic year as a Guggenheim Fellow and visitor in the M.I.T. Department of Mathematics and was a member of the Re-Entry Physics Study Panel at Lincoln Laboratory in 1961. He has lectured at the Soviet Academy of Sciences, the University of California in Berkeley, and the University of California in Los Angeles; and was co-author with Wallace D. Hayes of Princeton of an outstanding textbook, *Hypersonic Flow Theory*. He was recently elected a Fellow of the American Rocket Society and is chairman of its committee on hypersonics.

## Rocketing On

FRANKLIN J. KOSDON, '63, and Ronald H. Winston of Harvard recently received the American Rocket Society's annual citation for the best

undergraduate paper on rocketry for the second time. They are the first students to win this \$1,000 award twice, and both of their winning papers were based on original research which they have performed independent of their academic programs to develop and perfect a reliable solid propellant.

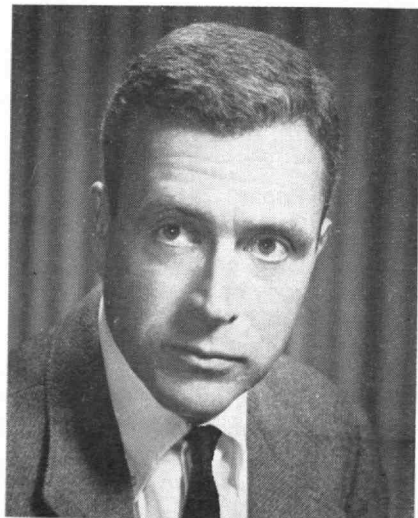
## Housemaster Named

LYNWOOD S. BRYANT, Associate Professor of History, will be the housemaster when the new residence for M.I.T. women (pictured on page 14) opens next fall. The building, made possible by a Second Century Fund gift from Mrs. Stanley McCormick, '04, will accommodate 116 students.

Professor Bryant was graduated from Harvard in 1929 and came to the Institute in 1937 after six years as Master in English at the Roxbury Latin School. He became assistant professor in 1942, associate professor in 1946, and directed the M.I.T. Press from 1957 until last fall. Now on leave of absence, he and Mrs. Bryant are spending this academic year in Europe.

Mrs. Bryant was graduated from Radcliffe and received a master's degree in psychology and philosophy from Mt. Holyoke College in 1941. She is assistant director of admissions at Radcliffe, a position which she will continue to hold, and has been active in the Technology Matrons. The Bryants have three children and formerly made their home in Winchester.

(Continued on page 6)



Richard M. Douglas will become professor and head of the Department of Humanities at M.I.T. in February.



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## Individuals Noteworthy (Continued from page 4)

### Faculty Notes

JOHN CHIPMAN, Professor of Metallurgy, Emeritus, will be the 1963 recipient of the Benjamin F. Fairless Award of the American Institute of Mining, Metallurgical and Petroleum Engineers. . . . Institute Professor Cyril Stanley Smith, '26, will give the lecture on outstanding research at the Montreal meeting in February of the American Society for Testing and Materials. . . . Professor Patrick M. Hurley, '40, participated in the seminar on radioactive dating, sponsored by the International Atomic Energy Agency, in Athens in November.

Professor Chia-Chiao Lin has been appointed chairman of a new M.I.T. Committee on Applied Mathematics. . . . Robert Shenton, instructor in humanities at M.I.T. in 1961-1962, has become assistant to the Registrar of Harvard College. . . . Dr. Abraham E. Nizel, '51, research associate in nutrition, took part in a health symposium sponsored by the National Vitamin Foundation, in New York in December. . . . Jacob E. Goldman, Visiting Webster Professor in 1959, now directs the Scientific Laboratory at the Ford Motor Company's Research and Information Center.

(Continued on page 32)

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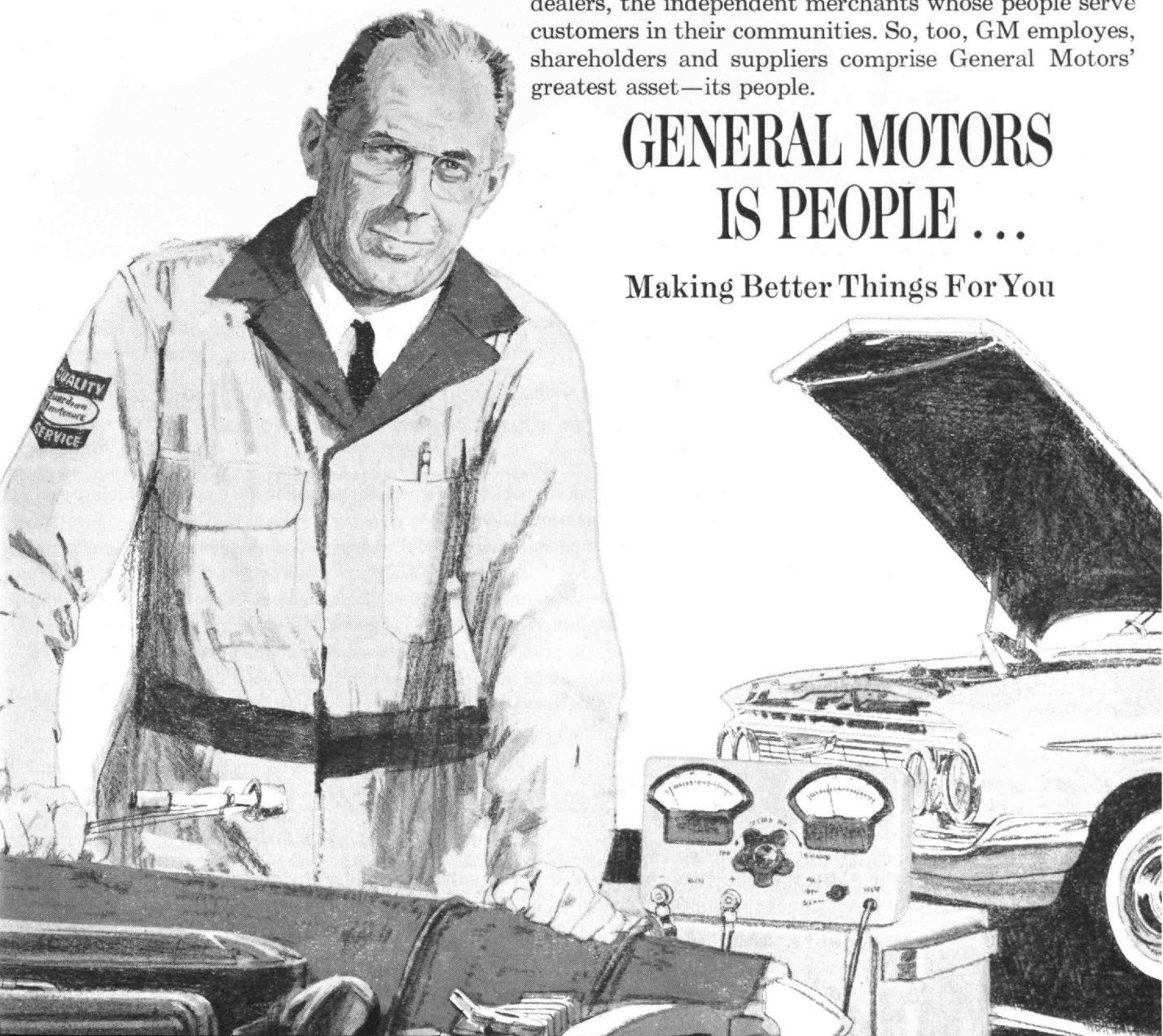
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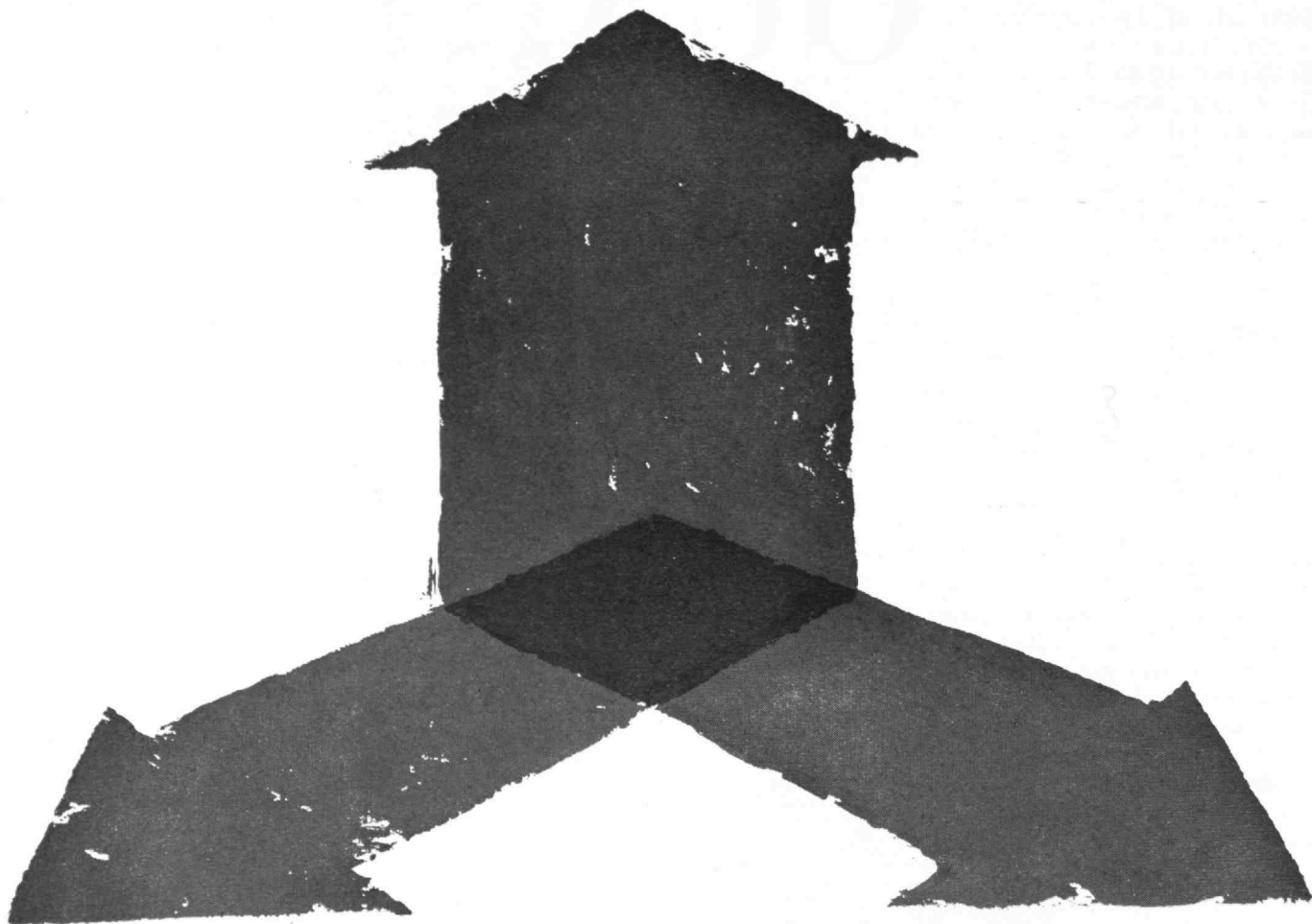
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# Useful Knowledge

*An address about the maser and practicality,  
given on Medal Day at the Franklin Institute*

BY CHARLES H. TOWNES  
*Provost of M.I.T.*

THE FRANKLIN INSTITUTE was founded to promote, among other things, the "increase of useful knowledge." I have often wondered just how its foresighted founders used this phrase "useful knowledge." My belief is that it had a clear and definite meaning well established by the usage of the time. In the modern context it carries the charm of age and catches one's attention in a very thought-provoking way. In any case, it stimulates me to proceed somewhat beyond simply telling a little of the story of the maser and, with apologies to The Franklin Institute, to raise a few questions about what in this world is "useful."

First, as to the maser. Our common experience is that electromagnetic waves—for example, radio waves, light, or x-rays—are absorbed and decreased by passing through matter, although a few substances are almost transparent. Physicists have understood this absorption for some time—a quantum of light of suitable frequency is absorbed by an atom or molecule, which then finds itself with extra energy in an excited state. Can waves also be amplified or increased rather than decreased by such action? Yes, by simply turning things upside down, in a sense. If the majority of molecules already have excess energy and are in an excited state when stimulated by a wave at the right frequency, they make the reverse trip to the unexcited state, delivering their quantum of energy to the wave. This is stimulated emission, which has also been understood for a long time. But until quite recently, this addition of energy to the wave was never directly observed, and most physicists had to think hard to remember that such energy given to a wave should add coherently—that is, simply increase its size without changing its direction, frequency, or phase. If one has a collection of molecules in the rather special condition such that more of them are ready to give up than to absorb energy, then a wave is increased or amplified in passing through them just as naturally as it is absorbed under normal conditions. The maser utilizes this principle plus a way of passing waves back and forth through the same collection of molecules so that the wave can continue to build up

without limit until the molecular energy is exhausted. The name itself, an acronym for *molecular amplification by stimulated emission of radiation*, gives a clue to this mechanism.

To use a maser for generation of light (which is an electromagnetic wave of optical frequency), the light is conveniently reflected straight back and forth between two parallel mirrors on either side of the specially prepared excited molecules. Such an optical maser is sometimes called a laser, for *light amplification by stimulated emission of radiation*. Similar designs also allow waves to be amplified and built up into steady oscillations in the infrared or in the ultraviolet region. Steady oscillations of light waves can be thus produced which give light of exceedingly interesting properties. No longer are we limited to light which is essentially heat radiation, or restricted in intensity by the temperature of the radiating body. Maser light resembles more the output of a radio-frequency oscillator—coherent, with a narrow frequency range, and no fundamental limit in power.

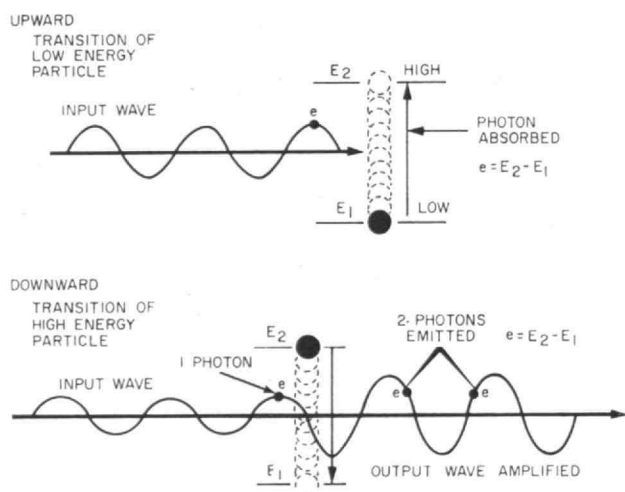
We think of atoms as emitting light of a well-defined frequency and wavelength, in fact, so well defined that it is used as a standard of length. The light from masers has already been demonstrated to have a wavelength variation over short periods one million times less than the best previous atomic radiation. In theory it should be still more monochromatic or constant in wavelength. This will allow measurements of distance to new orders of accuracy; it should give particularly striking improvements for large distances. But also small changes in distance can be precisely detected, allowing examination of seismic disturbances, or small strains in materials. Motions as small as 1/1000th the diameter of a single atom have recently been plainly detected with an optical maser.

We think of a searchlight as giving a highly directed beam. But beams of light from masers can be made a million times more directive than a high-quality searchlight. They can be sent by telescope to a distant spot as small as the telescope can resolve or see when used

normally. They can be concentrated by a microscope to the smallest part of an individual biological cell which the microscope is capable of resolving. Already a beam of maser light has been focused to illuminate a particular spot on the moon with sufficient brightness to be detected. Maser light gives the hope of wireless transmission of power in the form of a light beam over a thousand miles to a spot no bigger than one foot in diameter. Such concentrated beams allow easy signaling by light over large distances—between two planets in our solar system if needed, and with more difficulty they may allow signaling back and forth to intelligent life, if it exists, on distant stars.

We think of the surface of the sun as enormously hot and bright. But in the physicist's language, the light from a maser has an effective temperature millions of billions times greater than that of the sun's surface. Perhaps a clearer comparison is between the radiant energy density of a maser beam at the focal point of a lens and that at the sun's surface. The maser light energy is about 100 million times greater. The optical energy under such conditions is so intense that previously unobserved physical phenomena become commonplace, such as the production of non-linearities and harmonics in the optical region. The hardest material is no match for this light intensity. Holes in diamonds or in thin steel plates are easily drilled by a single 1/1000-second flash of maser light. This suggests etching, welding, and surgical applications.

If one examines the enormous variety of applications of optical, infrared, and ultraviolet radiation to science and technology, and realizes that masers give us this radiation in much more intense and yet in a more refined form, one can get some measure of the likely importance of this development. Furthermore, masers and concomitant techniques now in view promise the flexibility in handling light waves that electronics has for some time given us in the radio and microwave region. They thus open up the infrared and optical regions to sophisticated communications, radar, and other electronic-like applications.



If one has a collection of molecules in the rather special condition that more of them are ready to give up than to absorb energy, then a wave is increased or amplified in passing through them just as naturally as it is absorbed under normal conditions—as the drawing above suggests.

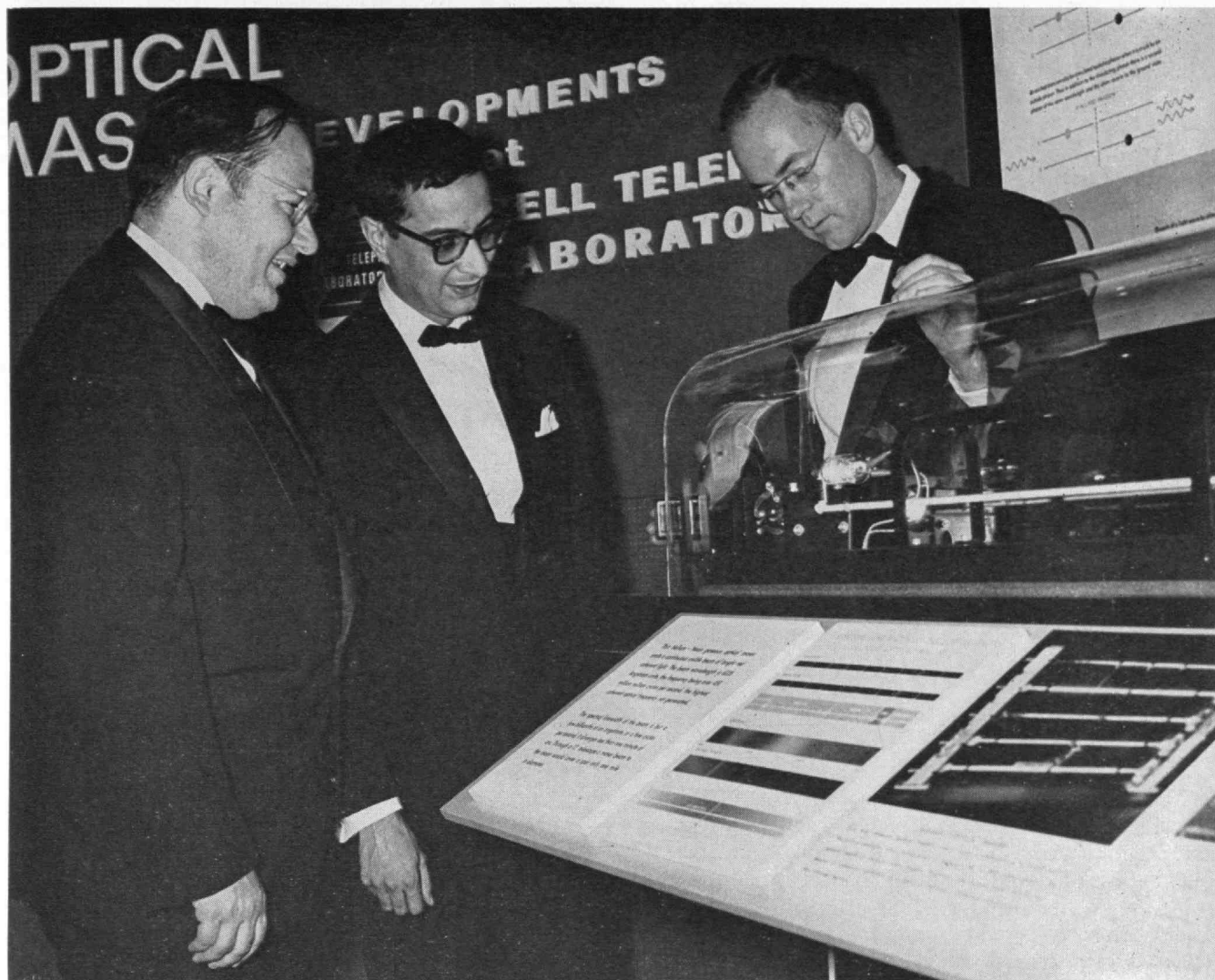
Masers in the infrared, optical, and ultraviolet regions are perhaps the most exciting types at the moment. But other forms in the radio-frequency region also give us the most accurate timepieces (a form of atomic clock) and the most sensitive amplifiers. Already maser amplifiers have allowed the remarkable reception demonstrated in transatlantic TV by Telstar, and their use in radio astronomy has yielded improved measurements of the temperature of Venus and Mars, and determination of the temperature and amount of gas in distant galaxies.

These many potential applications of masers are interesting and important. But perhaps more important are the processes by which such developments can come about, and which our society must keep well in view.

**T**HE maser affords almost a textbook example of the progress of research. It originated from scientific curiosity and scientific theory. When the war ended in 1945, a number of physicists versed in electronics and the new radar technology, which had just seen its spectacular growth, turned with this knowledge to fundamental studies of nuclear precessions in electromagnetic fields, microwave absorption in gases, and electron behavior in paramagnetic materials. This work was so interesting from a scientific point of view that it attracted to the original group a number of very able students, and there grew up from these first and second generations of scientists a somewhat esoteric but interesting body of knowledge and skills in microwave and radio-frequency spectroscopy.

The first workable maser idea came after about five years of fundamental work as the result of rather detailed understanding of a particularly strong absorption of microwaves by gaseous ammonia. At first gradually, and then more rapidly, additional ideas and refinements which extended the applicability of masers appeared and were worked out. By now, maser research is enormously active and being pursued by at least 500 research groups. A recent financial survey estimates that by 1970 masers will represent a business activity somewhere between \$250,000,000 and \$1,250,000,000 per year. These figures may or may not turn out to be correct, but they are at least not completely unreasonable. A large and varied technology is being born, and from it no doubt still newer scientific results and technical ideas will emerge. Both university and industrial laboratories have contributed importantly to this growth. American industry has been exceedingly alert and active in development of masers, and moved into this field with the speed, imagination, and vigor which is unique to the modern American scene. But the persons who initiated the field and the great preponderance of important successive ideas come from the small group of physicists who began to explore certain basic problems in radio-frequency and microwave spectroscopy just after the war, and from their students and co-workers, who now have important roles in a wide variety of laboratories.

This story differs from the textbook case only in that the latter usually omits the crucial contributions technological developments in turn make towards fundamental scientific discoveries. In this case the aid and



stimulation provided scientists by radar technology are evident in the endless chain of interactions between so-called "fundamental" and "applied" sciences.

We also see in the maser story the development of a research field along perfectly logical, yet never quite predictable lines. I must confess that initially I had little firm idea of many aspects of the maser which are now very important. My only consolation for such blindness is that I believe similar experiences to be common and that unexpected developments are typical of research.

We remember that the study of electromagnetism led inevitably to radio, and the study of nuclear structure inevitably to nuclear energy. I believe the study of microwave and radio-frequency spectroscopy just as naturally led to masers. But from the beginning, would the behavior of ammonia gas or paramagnetic substances in an electromagnetic wave have been generally regarded as "useful knowledge"? If so, useful for what? And would any research director have had such superhuman qualities as to set his laboratory to work on absorption of microwaves in order to produce very intense beams of light, or a clock of high precision, or an amplifier of greatly improved sensitivity? No, he would rather have called in the known experts in each of these fields and had them busy on more obvious and well-worn paths which were much less fruitful at that particular time.

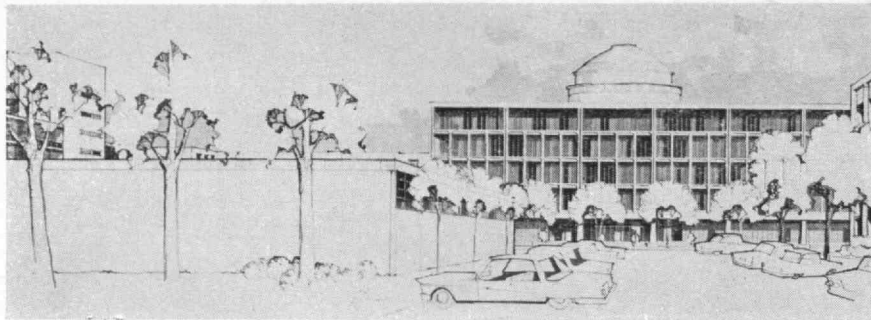
**BALLANTINE MEDALS** were presented last October 17 at the Franklin Institute in Philadelphia to Provost Charles H. Townes of M.I.T. and Professor Arthur L. Schawlow of Stanford University for their theoretical work and concept of a solid-state, three-level optical maser; to Theodore H. Maiman of the Korad Corporation for developing the first pulsed maser in the optical region; and to Associate Professor Ali Javan of M.I.T. for developing the first continuous optical maser. Professors Schawlow and Javan are shown at the left with Provost Townes. They were colleagues at Columbia University. Professor Schawlow is now Dr. Townes's brother-in-law, and Dr. Javan is again associated with Dr. Townes in research at M.I.T. For Dr. Townes, this was the second time that he received a Ballantine medal.

I hasten to make it clear that I have little patience with aimless and random research, or arbitrary collection of facts. And I certainly don't suggest abandoning direct approaches to solutions of technical problems, which are important, and surely need little defense here. But are they in any way more useful or practical than the longer-range development of scientific and technological knowledge which can provide bases for undreamed of and more powerful approaches? And is this latter any more useful than a social climate where education, ideas, and the thrill of discovery seem important? We must constantly remind ourselves that the most important practical results often come from the

*(Concluded on page 36)*



# Trend Of Affairs



## The New Materials Center

THE CLASSICAL PORTICO of M.I.T., with its great dome looming against the sky, will soon have a modern counterpart. On the north side of the main building a \$6,000,000 Center for Materials Science and Engineering will rise to provide another major entrance. Construction of the new building, designed by Skidmore, Owings & Merrill of Chicago, will start this winter, and it is expected to be ready for occupancy in 1964.

In the original plans for the main M.I.T. building, which was completed in 1916, Welles Bosworth, '89, the architect, envisioned the eventual extension of parallel wings to the northward. Changing needs, advances in architecture and construction techniques, and rising costs have resulted in departures from the original plan, but the design and location of the Materials Center will make possible a contemporary version of the original architect's concept, according to Philip A. Stoddard, '40, M.I.T. Vice-president for Operations and Personnel. "One of the greatest problems of the architects," he says, "was to design a building which would be economical and efficient but which would harmonize with the classical lines of the original building and, in particular with the massive dome which rises in the center. This we believe has been accomplished."

The new building will extend along an east-west line, parallel to the central corridor of the main building, and be connected by corridors, ramps and stairs with the central section of the main building. It will cover much of what is now the main parking area and, to provide additional parking space, the Institute is planning a new parking garage on Vassar Street.

The Materials Center will be of concrete, the structural elements being exposed to provide a harmony of texture and color with the gray limestone and concrete of the main building. It will be the same height as the main building, have five floors, be about 380 feet long and contain 160,000 square feet. The building will not have a full basement but rather a 1½-story section, starting below ground level, for air conditioning and other equipment. This will take up part of the first floor, the rest of which will be devoted chiefly to a lobby and machine shops. Upper floors will have a variety of classrooms, conference rooms, and offices surrounding a central laboratory core.

In deciding to build the Materials Center, M.I.T. made a deep commitment to one of the most urgent national

needs for both basic research and for more scientists and engineers to advance the science and technology of materials. The Advanced Research Projects Agency in 1961 awarded a \$4,975,000 contract to the Institute, representing increased support of the materials research program over a period of five years. Substantial support has also been given by private industry, the National Aeronautics and Space Administration, the Atomic Energy Commission, the Department of Defense, and the National Science Foundation. To help expedite the construction of the building, the Alfred P. Sloan Foundation has authorized the use of a part of its research grant to finance the building—the amount used to be paid back to the research fund in later years.

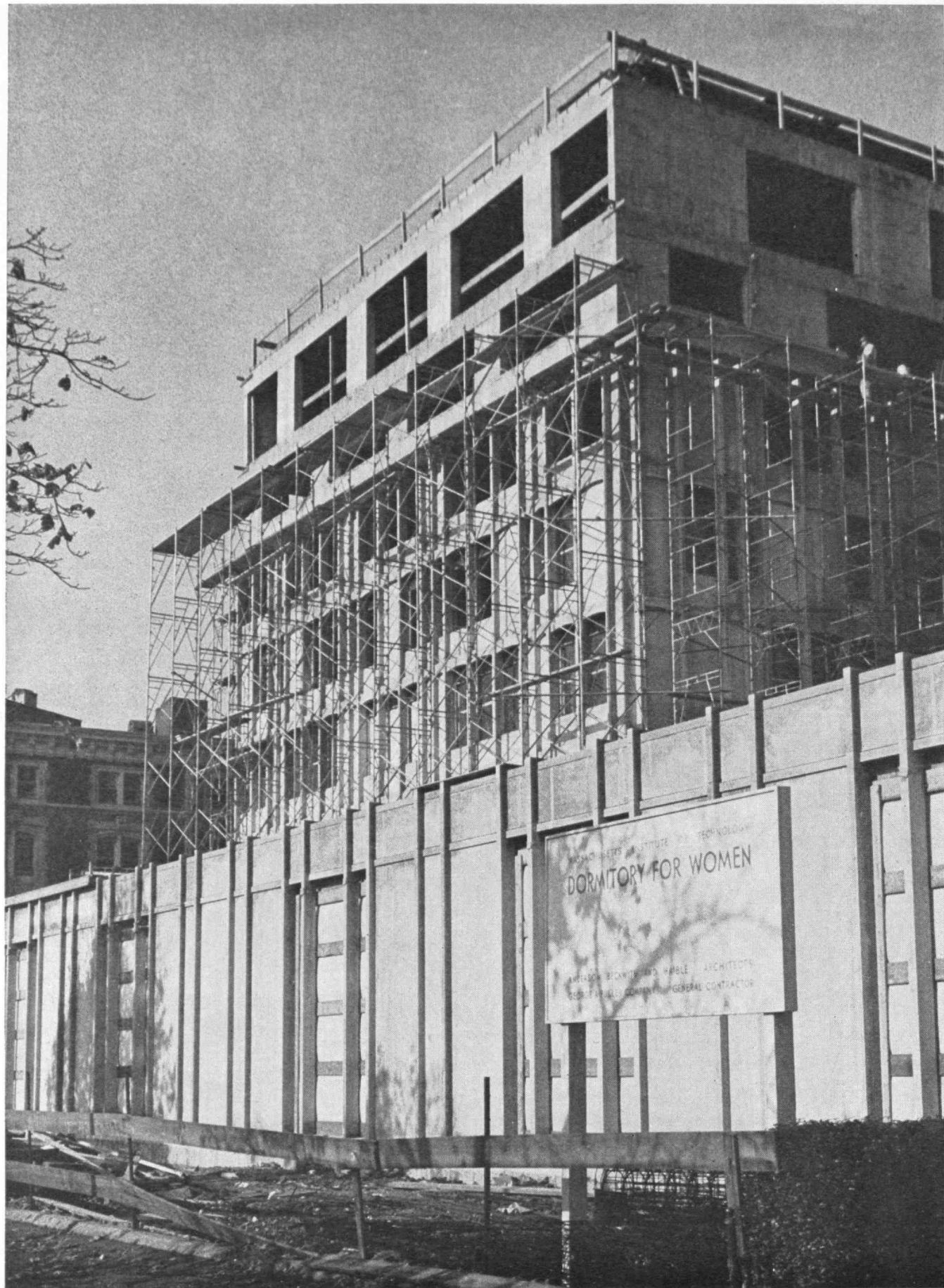
New advances in technology are largely dependent on the development of new materials, and on an understanding of the physics of the processes which determine their properties, according to Robert Allan Smith, the British physicist who has come to M.I.T. to be the first director of the Center. "The group that has the right material at the right time is the one that will get a breakthrough," he says. "The truth of this has been seen many times in recent years. The development of the transistor, depending as it does on the availability of extremely pure single crystals of germanium or silicon, is a good example. Research on the properties of atoms and molecules and on their use as 'building blocks' to form solids will be required if we are to have the materials such as new metallic alloys, semiconductors, superconductors, plastics, ceramics, etc., required to meet the stringent needs of modern engineering, particularly the new and special needs for travel in space.

"The period of trial and error in developing materials for specific needs is drawing to a close and we are becoming familiar with man-made materials with predetermined properties. There is still much that is not fully understood and many exciting new discoveries to be made. The research carried out in the Center will have as its aims the fundamental understanding of electrical, magnetic, optical, mechanical, chemical, and other properties of materials and their exploitation to produce new devices and new applications. This should form a sound basis from which new discoveries can be made. The transfer of this newly created knowledge to the next generation of scientists and engineers will be an important responsibility of the academic staff associated with the Center."



**THE MATERIALS CENTER** will be M.I.T.'s second largest building. It will stand on massive piers, with the first-floor walls set back to create a kind of colonnade, and its

façade will be dominated by a grid of vertical and horizontal structural columns and beams, broken by narrow concrete spandrels, separating full-length, set-back windows.



**NEARING COMPLETION** at M.I.T. is this \$2,000,000 dormitory for women, on Memorial Drive near Graduate House. Also going up this winter are a \$3,000,000 housing

center for married students, the \$5,000,000 Center for the Earth Sciences, and a \$580,000 cyclotron building. Nearing completion, too, is the new National Magnet Laboratory.



## To Strengthen Western Science

A WORKING GROUP appointed by the Secretary General of the North Atlantic Treaty Organization, with James R. Killian, Jr., '26, as its chairman, has recommended the establishment in Europe of an International Institute of Science and Technology. This, as now envisaged, would be an independent, graduate institution emphasizing an interdisciplinary approach to advanced education and research, and designed to meet the growing need for leaders and scholars who combine professional excellence with breadth of education, experience, and outlook.

The Working Group's report recommended that it have interdisciplinary centers dealing with Applied Mathematics and Theoretical Physics, Technological Processes and Systems, Materials Research, the Earth Sciences, and the Life Sciences, and a small additional center for Advanced Study. The establishment of such an institution with 1,000 students, an academic staff of 400 and a supporting staff of 1,000, the Working Group estimated, would cost about \$56,000,000, and its annual running costs would be \$17,000,000.

By exploiting opportunities unique to its international status, the Working Group found, such an institution could provide a new stimulus to existing institutions and add to the scope and diversity of Western education at the highest academic level.

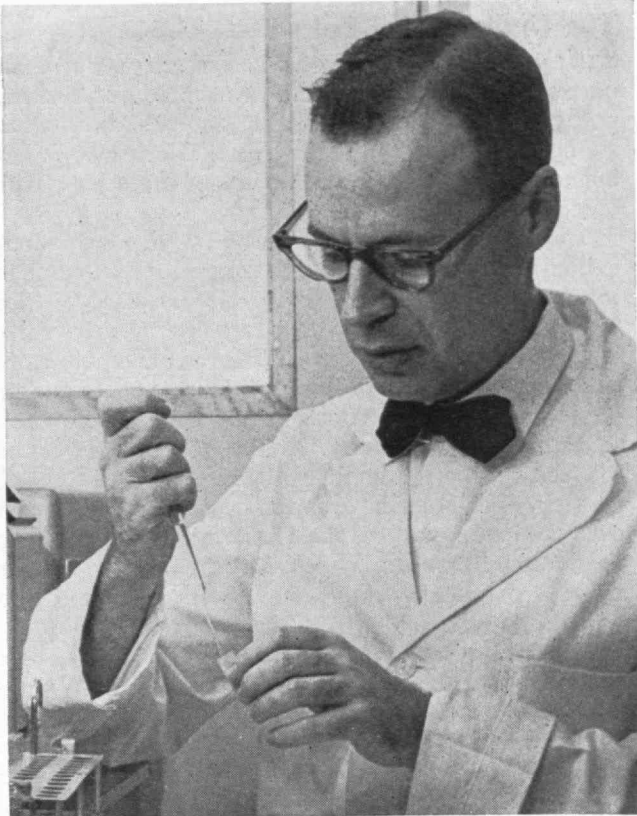
Dr. Killian's colleagues in the Working Group were Professor P. Caldirola of Italy, Professor H. B. G. Casimir of the Netherlands, Sir John Cockcroft of England, Dr. P. G. A. Pignaniol of France, Professor A. Rucker of Germany, and Professor W. A. Nierenberg (who preceded Professor W. P. Allis, '23, as Assistant Secretary General for Scientific Affairs of NATO). Others whose opinions are credited in the report with influencing the Working Group included Douglass V. Brown, Gordon S. Brown, '31, Edwin R. Gilliland, '33, Howard W. Johnson, Philip M. Morse, Ascher H. Shapiro, '38, Philip A. Stoddard, '40, Victor F. Weisskopf, Walter G. Whitman, '17, Jerome B. Wiesner, and Carroll L. Wilson, '32, of M.I.T.

## Grants for Studies Abroad

RECENT Ford Foundation grants totaling \$674,200 to the M.I.T. Center for International Studies will continue economic investigations in India and Nigeria.

The Center has been engaged in research regarding economic development in India for nine years, and this will be continued for another four by a \$555,700 grant. The goals are to learn more about the nature of the development process and techniques for facilitating growth, and to help India's government plan economic development and improve the country's research capabilities. Professor Paul N. Rosenstein-Rodan will continue to direct the program.

The \$118,500 Nigerian grant will support work by Archibald C. Callaway of the Center's staff on the problem of unemployed youth in Africa. More children are completing primary schooling—loathe to take up the traditional farming, and are unable to continue their education because of schoolhouse shortages and high fees. Their migration to cities in a vain search for work, Dr. Callaway reports, poses both an urgent social and economic problem and a political threat, which specific policies should be designed to alleviate.



Dr. Dowben at work in an Institute biology laboratory.

## Muscular Dystrophy Retarded

A TREATMENT which seems likely to prolong the lives of persons having muscular dystrophy was described at the American Medical Association's clinical meeting in Los Angeles last November by Dr. Robert M. Dowben, a member of the Northwestern University Medical School's Faculty, and a visiting lecturer in biology at M.I.T. This treatment, he emphasized, is not a cure but has yielded encouraging results in experiments with dystrophic mice and some human patients.

Muscular dystrophy, Dr. Dowben has postulated, is an alteration of the cell wall that results from some still unknown primary defect in the cell's structure or metabolism. This alteration permits protein to escape from the cell, which tries to produce more protein but cannot make up for the losses. In the treatment that he described, a digitalis preparation is given to curb protein seepage and a synthetic steroid compound to increase the cell's ability to produce protein. Daily energetic exercises are also an important part of the treatment.

Six years of intensive work by Dr. Dowben and his associates went into the development of this treatment and their research efforts have cost about \$280,000.

## Foe of Food Poisons

SAMUEL H. HOPPER, '33, chairman of the Indiana University medical school's Department of Public Health, described a new method of detecting toxic bacteria in food at last fall's meeting of the American Public Health Association. By combining a mining technique with one from microbiology, he has developed a rapid and relatively simple method of testing food before it is marketed for elements which heretofore have caused hundreds of thousands of cases of sickness each year.

## The Undiscovered Poles

SOME particles, as everyone knows, are positive and others are negative electrically. Are there also such opposites magnetically? Nothing in nature's laws as they are now taught precludes the existence of particles having north poles without south poles, or south poles without north poles.

The noted physicist Paul Dirac, who predicted the existence of the positron, pointed out in 1931 that quantum mechanics fails to explain the existence of electrons and positrons unless there are also particles carrying a single magnetic pole. This "Dirac monopole" must have substantially more "charge" than an electron, and the attractive energy between a north monopole and a south monopole is nearly 5,000 times as great as that between an electron and a positron. This might explain why opposite poles have never been separated. Whatever the cause may be, the Dirac monopole has never been found. Physicists have searched for it in vain in the pictures of events produced by great accelerators as well as by cosmic radiation.

Now Henry H. Kolm, '50, of M.I.T., and Professors Eiichi Goto of the University of Tokyo and K. W. Ford of Brandeis, are looking for it in the new National Magnet Laboratory. With the encouragement of other physicists, they built a new kind of trap for Dirac monopoles last summer. A very powerful magnetic field is used in this trap. With it, calculations suggested, it might be possible to pull monopoles into a bottle and photograph their tracks.

When Christopher Robin made his "expedition to North Pole," he found it reasonable to assume that

since he was looking for a pole it would be stuck in the ground. For geophysical reasons, Dr. Goto and his fellow monopole-hunters also concluded that a logical place to look for monopoles was in the ground.

The spot they chose to set their trap on, last August, was in the Adirondacks of northern New York. Surveys had previously revealed a strong magnetic anomaly of the earth there, which made it seem a likely place in which to detect north monopoles. They subjected that spot to such a magnetic tugging with their apparatus that they turned it into a small secondary South Pole of the earth. Weeks of careful scanning of the pictures they brought back to M.I.T., nevertheless, have revealed no traces of north monopoles.

Disappointed but not dismayed, the monopole hunters now are using their new tool in an effort to pull monopoles out of other possible hiding places. These include meteorites, and sand and core-drillings from the bottom of the sea. Thus far, these efforts, too, have been futile. But, says Dr. Kolm, unless someone eventually catches a monopole, physicists will have to explain why they don't exist. That, at present, looks even more difficult than snagging one.

## Fish Sets New Speed Mark

FRANK J. MATHER, 3D, '37, who is tracing game fish migration for the Woods Hole Oceanographic Institution, reported last fall that a bluefin tuna tagged in the Bahamas was caught off Norway, 5,000 miles away, only 50 days later. That's 18 days better than the best record set previously by a tagged tuna caught after making this long North Atlantic run.



Professor Goto and Henry Kolm, '50, with the apparatus used to look for "the Dirac monopole" in the ground last summer.



## Beneath Jupiter's Clouds

THE PHYSICS of planets can be studied not only from oceanographic ships, spacecraft, etc., but also by devising, watching, and analyzing laboratory models. What happens on the earth and other planets is determined in part by the hydrodynamics of rotating fluids, for example, and this is a topic that can be explored in a glass of water on a turntable. That, in fact, is what Professor Raymond Hide and his students in M.I.T.'s Building 20 are doing now in a sophisticated way, to improve their understanding of both the core of our planet and the sky above us, and possibly to explain the Great Red Spot on Jupiter.

Professor Hide began this work in England in the 1950's as part of an effort to account for the earth's magnetic field. That field almost certainly results from electric currents that are generated by fluid motions within the earth's core. Radioactive heating may produce such motions, and to examine this possibility he and his assistants built turntables. On these horizontal wheels they have placed vertical containers in which they rotate fluids under various conditions, to study such matters as heat transfer, flow instabilities and boundary layers in thermal convection. Such models look more like potter's wheels surrounded by instrumentation than like "miniature worlds," but are yielding data applicable to problems facing us in both our native and other real worlds.

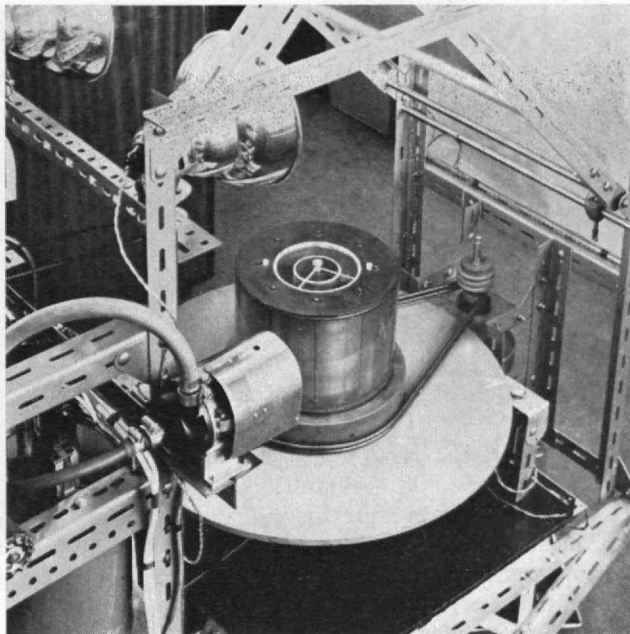
Phenomena such as are being observed in the fluids rotating in Professor Hide's laboratory have counterparts not only within the earth's core but also in its atmosphere. Hence meteorologists as well as students of the earth's interior have become interested in what is happening on these scientific "Lazy Susans."

In addition to thermally driven motions, mechanically driven motions can be created and studied in the fluids within the cylinders on the turntables, and this is being done now in the hope of revealing the reason for the Great Red Spot on Jupiter which has puzzled astronomers for more than a century.

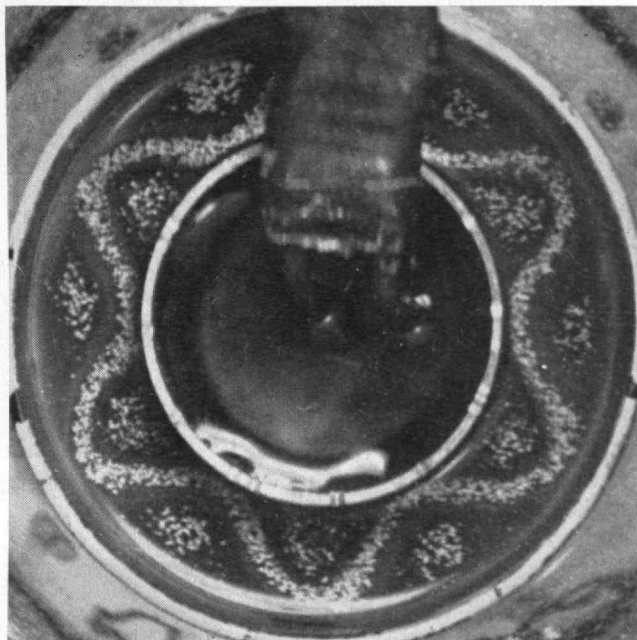
Jupiter is the largest of the sun's planets, much farther from us than Venus and Mars, and it rotates much faster than our planet. It is surrounded by dense, ever-changing clouds in which there is a persistent red oval tens of thousands of miles long. This spot drifts somewhat longitudinally but changes only very slightly in latitude. What is it? Some kind of strange raft floating in that gigantic planet's clouds?

That has been suggested, but Professor Hide has recently advanced a more plausible idea. The Great Red Spot, he thinks, may be a stagnant column caused by a topographical feature of the solid sphere beneath Jupiter's clouds. Sir Geoffrey Taylor demonstrated the possibility of creating such a column in a rotating fluid long ago; and Alan Ibbetson, one of Professor Hide's students, can produce one now—whenever a visitor asks to see it—in a glass container on a turntable. Even a very shallow irregularity in the hard spherical surface of a planet, it has been shown, could produce such a column in Jupiter's atmosphere.

A newcomer to M.I.T.'s Department of Geology and Geophysics, from King's College at Newcastle upon Tyne, Professor Hide already has been joined here by several colleagues from England, and their work is being supported now by the National Science Foundation.



Fluid between upright cylinders on horizontal, rotating surface in laboratory helps clarify planetary physics problems.



Top surface flow patterns produced in fluid in a rotating annulus when one cylinder is heated and the other is cooled.

## 100,000 Straws in the Wind

TO TAKE the swirls and eddies out of the air in a new, small wind tunnel used by students of aeronautics and astronautics at M.I.T., a honeycomb made of 100,000 soda straws is serving nicely. The straws are a foot long and  $\frac{3}{16}$ ths of an inch in diameter, and are stacked in a six-by-six-foot frame. It took two days to stack the straws, and the straw-maker who supplied them said he had never seen so many unwrapped soda straws in one heap before.

Professor Erik Mollo-Christensen, '48, designed the tunnel in which they are placed. Both gentle breezes and winds up to 60 miles an hour are smoothed out as they move through the straws.



# Searchers For Talent

*Alumni appointed by President help M.I.T. find the students with capabilities it requires*

**T**HE MEN at the right are representative of 808 Alumni of M.I.T. who now serve the Institute as Educational Counselors. They were photographed during a recent Alumni Officers' Conference. They are grass-roots workers, appointed by the President of M.I.T., and as such share in the responsibility for the school's future.

The Educational Council's primary objective is to help M.I.T. obtain as students those young men and women who are best qualified, both academically and by their character and other capabilities, to benefit from—and to contribute to—study under the great dome beside the Charles. The search for such young people has become increasingly competitive since this council was formed in 1951.

As the Institute's representatives in their communities, the Educational Counselors are concerned with the public image of M.I.T. Are false impressions or lack of knowledge keeping potentially good applicants from considering M.I.T.?

To minimize this danger, 42 members of the Faculty and staff visited 736 secondary schools last year, and were accompanied on 238 of those visits by an Educational Counselor. In addition, about 100 high school guidance counselors have been brought to Cambridge each fall for the last seven years to familiarize themselves with M.I.T.'s goals. Alumni serving on the Educational Council work closely with such people locally. Counselors also submit reports helpful to the M.I.T. Admissions and Financial Aid Offices, in addition to making themselves available to advise young folk.

In today's educational climate, these men are serving on a frontier of utmost importance to the nation.



**William R. Wheeler, '25**  
*New York City*



**George H. Hotte, '43**  
*West Fairfield County, Conn.*



**Henry Avery, '41**  
*Pittsburgh, Pa.*



**Harry E. Essley, '36**  
*Rochester, N.Y.*



**Samuel E. Lunden, '21**  
*Los Angeles, Calif.*



**George B. Morgan, '20**  
*Beaumont, Texas*



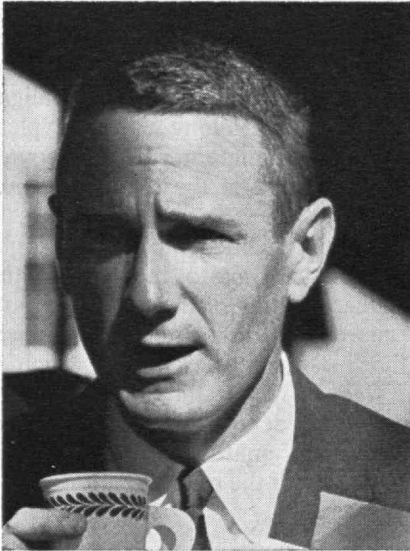
**George C. Hatch, '34**  
*San Diego, Calif.*



**Harry L. Moore, Jr., '32**  
*West Fairfield County, Conn.*



**A. Rufus Applegarth, Jr., '35**  
*Ft. Washington, Pa.*



**John D. O'Brien, '51**  
*Rochester, N.Y.*



**David R. Goodman, '40**  
*Madison, Ind.*



**Edward C. Telling, '42**  
*Cortland, N.Y.*



**Harold C. Pearson, '23**  
*Toronto, Ontario*



**Henry Moggio, '28**  
*Allentown, Pa.*



**James R. Kane, '44**  
*Louisville, Ky.*

# Computer Models of Future Roads

*Political controversies over public works may be halted by predictions now becoming feasible*

BY PAUL O. ROBERTS, '57

*Assistant Professor of Civil Engineering, M.I.T.*

IT IS NOT surprising to find that the electronic computer, which already does so many things, is now becoming one of the primary tools of highway design. What is perhaps surprising is that its most important use in the planning and design of a highway is for the building of models. Why not use one of the highway building sets available in the toy section of a department store? Is a \$200,000 piece of equipment needed just to build models?

The models set up in electronic computers are both more complicated and vastly more useful than those built with erector sets. Engineers can use computer models to determine the physical consequences of a road location. They are also beginning to use computers to build models of the processes going on in transportation systems. In both cases they can study, revise, and consider new possibilities. The computer actually becomes a trial model, a prototype or a test laboratory with which the engineer tries out new designs. Using them, he can measure quantitatively the effects of each different design before the decision to build is made.

One of the primary uses of the computer models is for the quantitative measurement of costs associated with a particular design alternative. The idea is to put prices on everything that can be pinned down. These costs are then combined to produce total costs taking account of the time value of money. Alternative designs can then be compared and the decision made to select one. Although this form of economic analysis is not new to American industry, its application to road design has been slow because of the difficulty of determining some of the costs and because of the probabilistic nature of some of the variables, such as future traffic volumes and the value of drivers' time. Now with the model-building capability of the computer and with modern mathematical tools such as probability, statistical decision theory, and sensitivity analysis, progress in computing some of these difficult-to-obtain costs is being made. Although much remains to be done before we can represent an entire transportation system in one huge computer model, we can and are already doing many things.

## Digital Terrain Model

We can build, first, a model of the configuration of the ground. This consists of point representations, or samples of the ground, referenced to a base line and taken along cross sections at right angles to it. Taken together, these numerical representations of the earth constitute a digital terrain model of the surface. If desirable, and it frequently is, such a model can be obtained from

aerial photography without ever setting foot on the site. Automatic devices, under development, take the information directly from a photogrammetric stereo model.

Whatever the source, the numerically quantified representation is punched into cards for the computer's use. The engineer then selects trial alignments which the computer evaluates. First, it calculates the geometry of the line which the designer has chosen and relates it geometrically to the base line. This automatically relates the engineer-selected alignment to the terrain model. Then the ground profile of the alignment can be obtained. Using it, the engineer designs a vertical alignment and feeds it to the computer along with the typical shape of the cross section. The computer then computes the vertical geometry and shape of the road and again relates it to the terrain model.

With the complete spatial relationships of the highway thus established with respect to the terrain, the computer goes about the detailing of the design. It puts in median ditches, guard rails, and drainage facilities. It also establishes the line of the back slope, which is needed to determine right-of-way requirements. Finally it computes and reports the detailed geometric shapes involved and the volumes of material to be removed or added physically to construct the road.

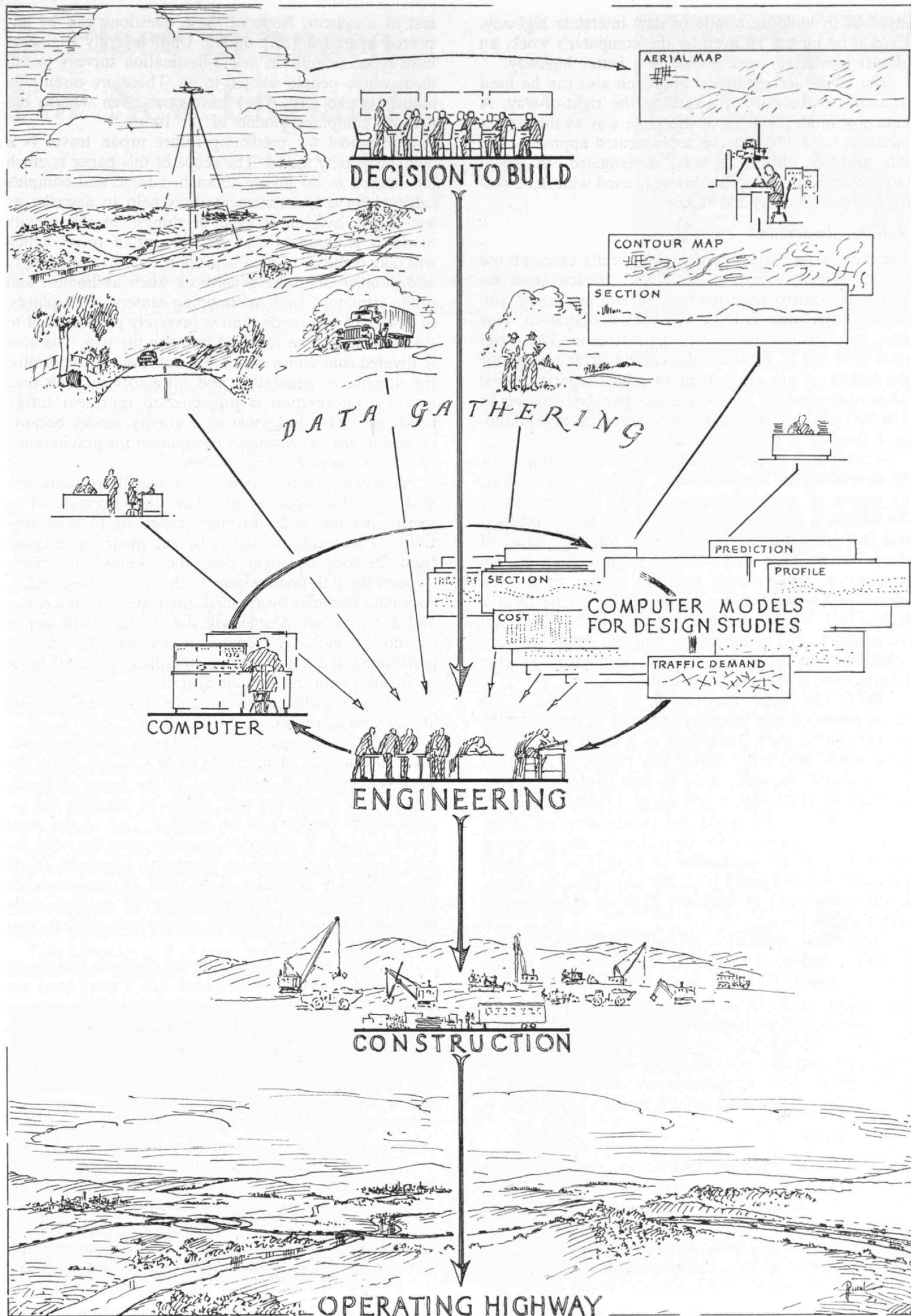
## Plotting the Answers

The computer produces literally reams of information about each alignment. It then makes plots to present this information in forms usable by the engineer. Part of the graphical output is actually a very crude set of construction plans. These have proven to be very useful in the design process: they both help the engineer locate culverts and back drains, and avoid obstacles such as cemeteries. Computer plotting is an intriguing subject with a fascinating future.

The computer's work gives the engineer the time and freedom to try different alignments. In rural and suburban highway design, the problem is often almost exclusively one of location. The physical location of the road determines its cost. Hence, the final cost which will result is a function of the engineer's ability to try many different lines and compare them quantitatively.

A principal feature of the digital terrain model approach is the ease with which different alignments can be tried. The system is so designed that a whole new alignment frequently can be tried by changing a single card and sending it back to the machine for recomputation. The result may be a saving in the physical cost of building the road; earthwork volumes of half a million cubic yards, at 50 cents a cubic yard, are commonly





involved in building a mile of new interstate highway. Even if no money is saved by the computer's work, an almost inevitable consequence is a better highway.

The digital terrain model approach also can be used to estimate the cost of acquiring the right-of-way. A land cost model built up in the same way as the terrain model is used. Other more sophisticated approaches to this problem also have been investigated, in which large-scale computing equipment is used with deed records stored on magnetic tape.

### Vehicle Simulation

The costs associated with highways greatly exceed those for the asphalt, concrete, steel, and the few signs required to construct the roadway. There are many continuing costs such as those for vehicle operation, user time, road maintenance, and administration. These can total from six to 10 times the capital or first costs for the facility. A one-cent saving in vehicle operating cost when multiplied by 10,000 vehicles per day amounts to \$36,000 per year and can justify a capital expenditure of a third of a million dollars.

A computer model can disclose the continuing costs by simulating the operation of a vehicle. This is done by means of mathematical equations. The motion of the vehicle is computed from the basic laws of physics, and fuel consumption is calculated on the basis of the power thus required from the engine. Knowing the horsepower requirements and the engine r.p.m., the computer obtains the fuel needs of the engine from a typical fuel map for gasoline engines which is built into the program. The nature of the program makes it a very sensitive evaluator of the time-fuel profile for a specific vehicle over a specific alignment.

One of the "bugs" that had to be eliminated in the development of this program occurred in the gearshifting subroutine. As a truck went up a steep hill the program would shift into a lower gear range. In the lower gear it would frequently have enough power to accelerate back up to the higher gear range. It would then shift up only to have the speed and power drop off again. This sort of oscillation was corrected by adding several instructions to the subroutine to hold it in the lower gear until it could make it all the way. This, of course, is the same kind of difficulty that an inexperienced driver might have.

The vehicle simulation program helps the engineer achieve a balanced design by forecasting the magnitudes of vehicle fuel and travel time requirements on the highway to be built. As the traffic volume rises, he may be justified in cutting deeper into a hill because the higher construction cost will be offset by savings to the road's users. The model is also very useful for predicting truck-operating performance; with it, we can tell better where to put truck-climbing lanes.

### Urban Design

The techniques described thus far are useful primarily for work in rural areas. In urban areas the problem is liable to be more difficult. Traffic volumes cannot be determined once and held constant throughout the study, as they often can in rural or semirural areas. The engineer must consider simultaneously the location of the facility, the number of vehicles that will use it, and the resultant congestion, along with its effect on the

rest of a system. None of these questions can be answered apart from the others. Until recently engineers have relied mainly on origin-destination surveys to tell them where people wanted to go. These are essentially models of the past. They have now given way to the use of "computer models of the future."

One model for predicting future urban travel is a demand gravity model. The scope of this paper is much too limited to do justice to such a large and complex subject, but a few statements may help to describe its use in the over-all scheme of things. In the gravity model it is assumed that the amount of travel which will take place in an area is proportional to the strength and number of traffic generators, such as homes, and traffic attractors, such as shopping centers, work places, or places of recreation, and is inversely proportional to the amount of time required to make the trip. The area is divided into zones which are surveyed to determine the number of generators and attractors in each one, and this information is projected to represent future conditions. This is known as a gravity model because of its similarity to Newton's formula for the gravitational attraction between two bodies.

An urban transportation system usually is characterized by a link-node graph. The links correspond to streets and the nodes to intersections or to zone centroids. The travel generated by the model is assigned from the zone of origin along the shortest time paths through the link-node system to the zone of destination. As a path becomes overloaded, the travel time increases and not as many people will use it. They will switch to another path. The computer accounts for this by performing the computations iteratively for each zone in the area until the amount of traffic generated at each zone is just sufficient to produce equal travel times along alternate routes.

In a research project recently begun, workers in the Civil Engineering Department at M.I.T. will study the various methods of predicting future travel demand, explore new ways, and seek means of handling the aspects which cannot now be handled. One of the most pressing needs is ability to measure quantitatively the cost involved in the various alternative solutions. To do this effectively we need to be able to accommodate 24-hour flows, not just peak-hour or average daily flows. We also need to know more about capital costs and congestion costs.

The value of the gravity model depends largely on our ability to predict future land use. Future land use is, on the other hand, largely a function of the present transportation system. Land use and the transportation system are closely interrelated. By controlling the transportation system, you can control the land's accessibility and therefore its future use and value. A research team is now using large-scale computer systems to program regional growth models. Disorderly urban growth may thus be curbed and communities created which have more of the values that we as human beings seek in our environment.

### Traffic Simulation Models

As a last example of computer models, let us examine a traffic simulation model that looks at the transportation process on a micro-scale and in a probabilistic fashion.

*(Concluded on page 38)*

# A Place in Space For New England?

*M.I.T. and NASA help the area's business interests consider future requirements and the resources at hand to meet them*

**T**HE BEST WAY to learn about the universe is to travel in it, and America is now striving to become "the leading space-faring nation." How can New England, which helped make this a great seafaring nation, contribute to the exploration of space?

Robert C. Seamans, Jr., '42, Associate Administrator of the National Aeronautics and Space Administration (NASA), posed this question last November at the New England Regional Space Conference. For two days several hundred industrialists and educators studied it at this conference, sponsored for the region by M.I.T. and for the federal government by NASA.

John V. Harrington, '58, Head of the Radio Physics Division of Lincoln Laboratory, was the chairman, and James R. Killian, Jr., '26, Chairman of the M.I.T. Corporation, welcomed the participants to the Institute and emphasized the need for "a triple play" involving government, industry, and education.

President Julius A. Stratton, '23, of M.I.T., it was announced at this meeting, is now serving with Lloyd D. Brace, chairman of the First National Bank, and William Webster, '23, President of the New England Electric System, on an organizing committee to bring about greater utilization of New England's resources. The Greater Boston Chamber of Commerce, headed by Earl P. Stevenson, '19, has been active in such efforts, and Professor H. Guyford Stever has served as chairman of its Space Technical Advisory Committee.

This committee, Professor Stever reported, has examined New England's qualifications and recommended

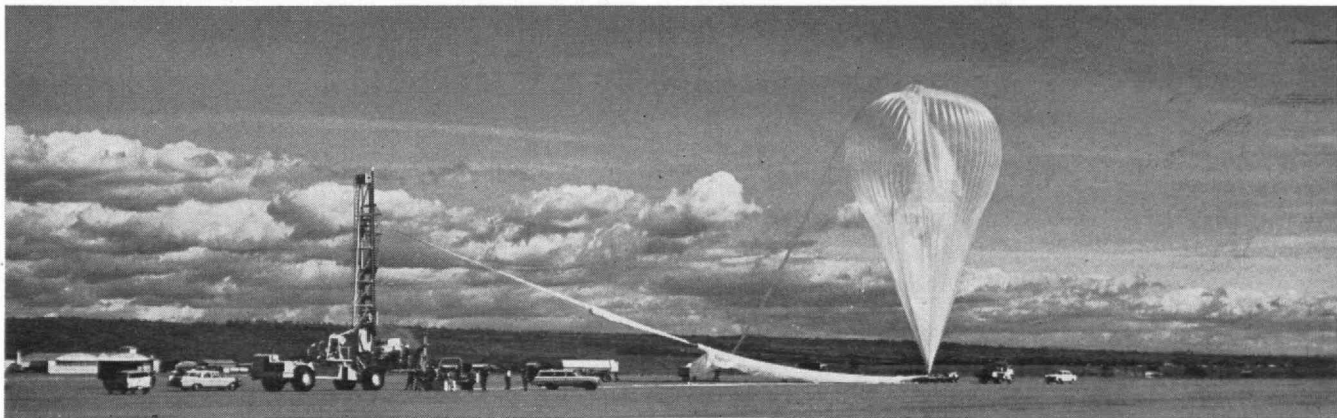


James A. Van Allen at the lectern.

that the region's business interests focus their attention especially on five projects. These, in the order in which they were favored by the committee, are:

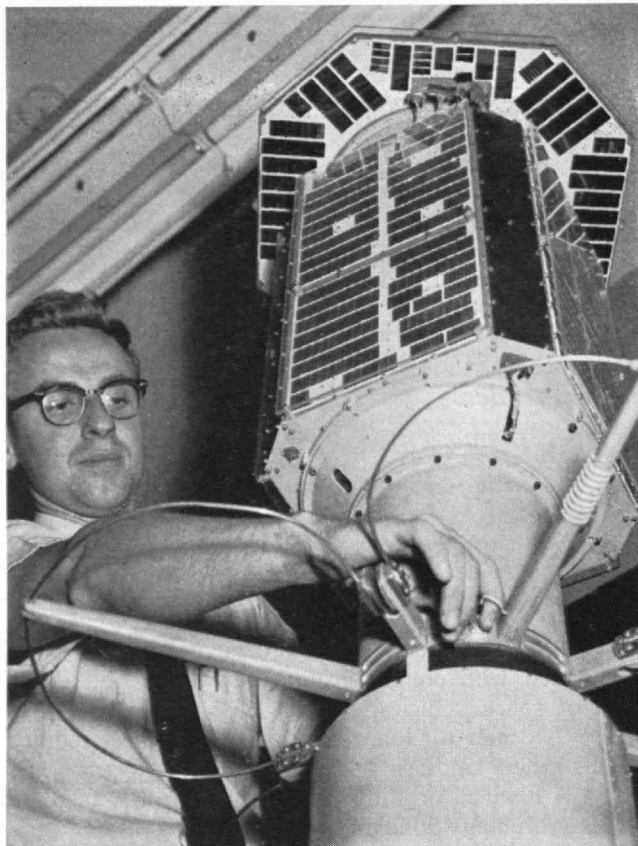
- 1) A space electronic ground environment project, concerned with communications, tracking, and detection of space vehicles;
- 2) A center for lunar development to meet requirements when landings on the moon begin;
- 3) A manned orbiting-laboratory project to facilitate studies of many kinds;
- 4) An adaptive systems development project to yield instruments capable of performing some of men's functions; and
- 5) A meteorological satellite project to be concerned with challenging quantities of data.

Dean Howard W. Johnson of the M.I.T. School of Industrial Management, at the first session of the conference, described the increase since 1941 in research and development expenditures and commented on it. We probably are not spending enough of this money on basic research, he suggested. Government spending appears to be concentrated in a few industries, and a few firms within those industries, he noted, and is making the risky ventures of small (risky) firms even riskier. We need, he said, a more flexible work force and more knowledge of the organization of research, its translation to commercial uses, and its profitability. "The challenges and opportunities represented by large-scale expenditures," he concluded, "are both important and demanding. This country is now embarked on a

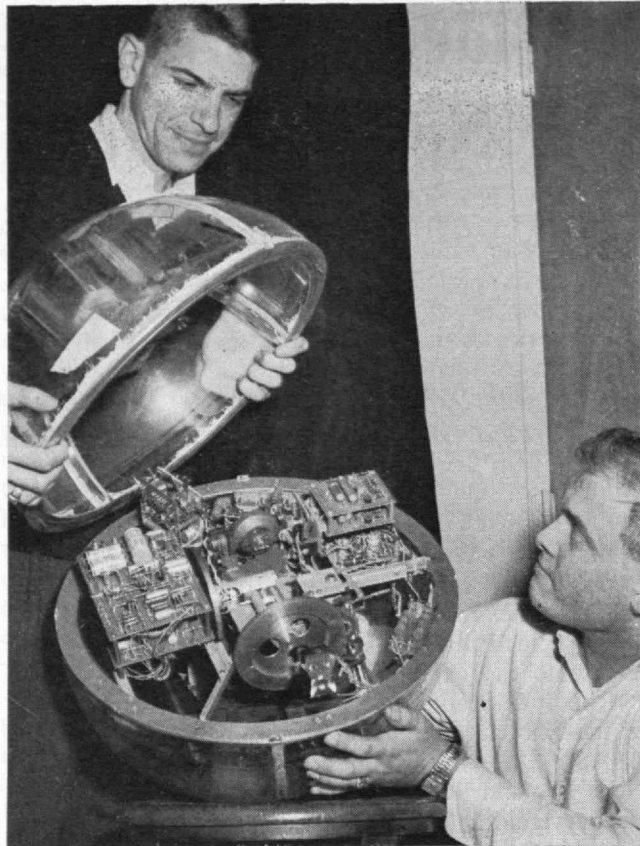


Students in M.I.T. laboratories have built equipment carried into the upper atmosphere to study microwave spectral lines.





**Gordon Garmire, '62, prepared a model of the Explorer XI satellite, used to study intra-galactic gamma rays, for exhibition at the New England conference on space problems.**



**James K. Roberge, '60, and Ronald W. Cornew, '61, prepared a model of the attitude control system designed for possible use in mapping Venus by radar from a space ship.**

process which cannot be reversed, economically speaking. New England, because of its special strengths, stands in a remarkable position both to contribute to it and gain from it. Our wisdom in dealing with it will affect our economy and our system."

The goals of the space program were explained at this session by Abraham Hyatt, Director of Plans and Program Evaluation for NASA; and Associate Professor Lincoln P. Bloomfield of M.I.T. dealt with the international political implications of progress in space.

Provost Charles H. Townes presided at a session in which research to which New England already has made notable contributions was reviewed. Professor Bruno B. Rossi of M.I.T. described the efforts of his colleagues in cosmic-ray research to detect gamma rays in space and to observe the solar wind. Associate Professor Alan H. Barrett reviewed what has been learned to date about Venus and Jupiter by radio astronomy. Professor Jule G. Charney of M.I.T. discussed ways of increasing the usefulness of weather satellites. Professor Leo Goldberg of Harvard described the orbiting astronomical observatory soon to be launched.

Radar observations of the moon, sun, and Venus then were described by Lincoln Laboratory's Dr. Harrington. Soon, he said, all of the planets up to and including Jupiter should be observable by radar, but the distances attained thus far "are exceedingly small compared to the distances over which we will someday wish to communicate."

James A. Van Allen's presentation of the recommendations of participants in the Iowa Summer Study on Space Research was another high light of the confer-

ence. The search for life elsewhere will be a major object of future space missions, he suggested, and the scientists participating in the Iowa study emphasized the importance of efforts to make Mars an ecological preserve by preventing its contamination with terrestrial life. Another Darwin will be needed, he said, and efforts should be made to recruit members of future space crews from the ranks of well-qualified geologists, biologists, and physicists.

Franklyn W. Phillips, '41, Director of NASA's Northeastern Office, and DeMarquis D. Wyatt, Director of its Office of Programs, outlined the federal space agency's objectives and needs. Franklin K. Pittman, '41, spoke for the Atomic Energy Commission; Lawrence L. Kavanau for the Department of Defense, and Randal M. Robertson, '36, for the National Science Foundation.

Professor Fred L. Whipple of Harvard conducted the concluding discussion, during which Professor Charles S. Draper, '26, of M.I.T. emphasized that peace now depends on the technological balance between competing groups. Milton Greenberg, President of the Geophysics Corporation of America, and Martin Schilling, Vice-president of the Raytheon Manufacturing Company, pointed out New England's outstanding technological resources, and Professor Ross A. McFarland of Harvard suggested that more use might well be made of this area's resources in biology.

Boston, said Arthur R. Kantrowitz, Vice-president of the Avco Corporation, is an intellectually dominated, university-centered community, which should be a leader in originating, developing, and defending new points of view.

# The Sloan Program Is 25 Years Old

*Many of its 465 graduates now hold positions of responsibility with the concerns that nominated them for M.I.T. fellowships*

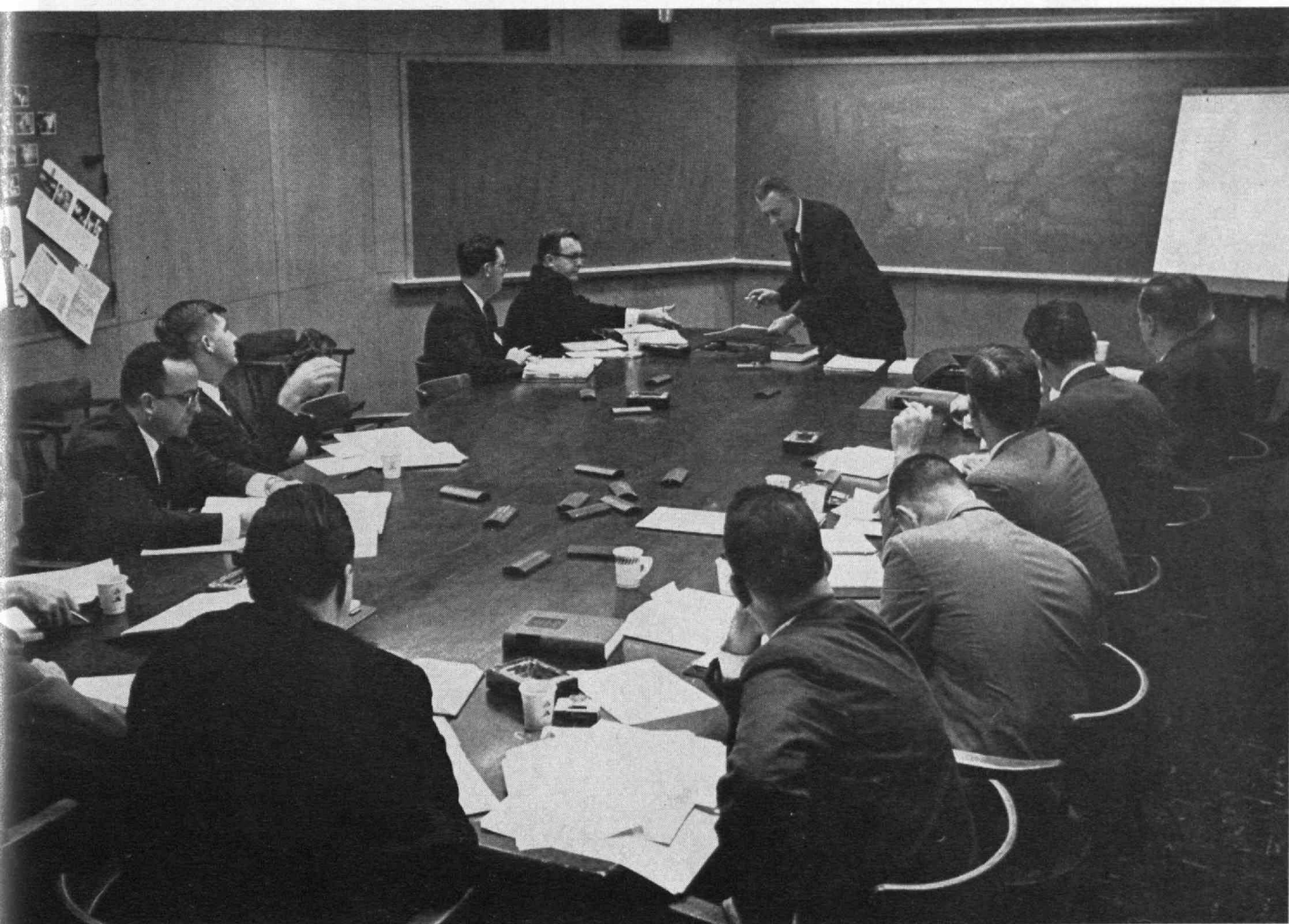
BY PETER P. GIL, DIRECTOR,  
*M.I.T. Executive Development Program*

IN 1938 a bold, imaginative, and pioneering program conceived earlier by Professor Erwin H. Schell, '12, began to receive important financial support from the Alfred P. Sloan Foundation. Professor Schell's idea was to bring six young executives to the Institute for 12 months of association with its Faculty and with industrial leaders of the country. Each young man was sponsored by an outstanding business executive: Lamot du Pont,

'01, Francis W. Fabyan, '93, Charles Hayden, '90, John R. Macomber, '97, Alfred P. Sloan, Jr., '95, and Charles A. Stone, '88. The idea, widely accepted today, reflected the vision and courage of those sponsors. Not everyone felt in those days that a university could contribute towards the more effective and responsible management of our society's human and economic resources. (One Boston newspaper wrote teasingly, "Tech to Train

Supermen.") Mr. Sloan was the man who most believed in education for business leadership from the very beginning, and because of his dynamic and farsighted encouragement the uncertain innovation of 1931 developed into the Sloan Fellowship Program now known throughout the world.

Since the original six were graduated 30 years ago, 465 men have been graduated. Over 95 per cent are still with the organization which



Sloan Fellows benefit from close association with M.I.T.'s Faculty and with each other during their year of study.



sponsored them and their record of achievement is reassuring evidence that companies can spot potential senior leadership early. Among these Alumni are 27 presidents and/or directors of corporations, 51 vice-presidents, 30 general managers, and nine directors of research. The others include product managers, secretaries, treasurers, comptrollers, and department, division, and plant managers. In more recent times men have been sponsored by government agencies and the armed services, which face increasingly complex problems of management and administration, and Alumni of the Sloan Fellowship Program now hold positions of major responsibility in the defense establishment of our country. Whatever else may be said of the program, its graduates do go on to occupy senior posts where they may practice what they have learned.

The Sloan Fellow comes to Tech with an unusually above-average record of achievement on the job; he is nominated for a fellowship by his organization because such accomplishments suggest a strong potential for future growth. His accomplishments, however, are almost always within a specific function or area. He has not had the time or opportunity to think much about the business as a whole or about the firm's economic, social, and political environment. In most cases he has been concerned more with "putting out fires" than with planning and weighing the long-term consequences of decisions. And, like most of us, he has not had the time to keep up with developments in his particular field—let alone in fields where he has no experience or training. In a rapidly and constantly changing environment, his problem is more often one of catching up than of keeping up.

During his 12 months of study at M.I.T. (leading to a master of science degree in Industrial Management), he is exposed to three groups of people who contribute toward widening his horizons, bringing him up-to-date, and sharpening his judgment and sense of responsibility to others. Those groups are the Faculty, the Sloan Fellows themselves, and industrial and governmental leaders.

A first-class Faculty works closely with the Sloan Fellows in small



**In Cambridge, Peter P. Gil (facing camera) directs the Sloan Program.**



**In Washington, its Fellows have met Attorney General Robert F. Kennedy.**



**In Bonn, they have heard Minister of Economics Ludwig Erhard.**



groups. The class, numbering between 40 and 45, is divided into three sub-groups for most instruction. The Sloan Fellows themselves contribute much both to the Faculty and to each other. They reflect a wide variety of specialized experiences from all phases of industry and government. Because they tend to be highly articulate, they profit enormously from their close association with one another.

The third group which contributes to the success of the Program includes business leaders and government officials both in this country and abroad. At Tech, in New York City, in Washington, D.C., and in Western Europe, the Sloan Fellows enjoy informal and "off the cuff" discussions with presidents of companies, chairmen of boards, cabinet members and ministers, supreme court justices, ambassadors, and other leaders of our society. At Tech there is an evening meeting every week throughout the year. Last year 65 chief executives from industry and government journeyed to the Sloan Building for dinner and a two-hour after-dinner discussion with small groups of Sloan Fellows. Plant management is studied in the field in September. Last year the group went to the Philadelphia area to spend three days with executives of R.C.A., Campbell Soup, Sun Oil, and Socony Mobil Oil companies. In December one full week is spent in New York City visiting, primarily, the heads of important financial institutions and leading corporations. In March a full week in Washington, D.C., is devoted to discussions with top policy makers of the government. For the last three years the Sloan Fellows also have traveled to the industrial, commercial, and political capitals of Western Europe to study the competition and opportunities posed by the unprecedented industrial explosion there since World War II. The Sloan Fellows have met with ministers of state, managing directors, and other leaders in Great Britain, France, Italy, Germany, and Belgium.

The imagination which characterized the inception of the program 30 years ago has not been lost, and the Class of 1964, which will be selected in April this year, will have adventuresome opportunities to prepare itself for future business leadership.



**In New York, A.T. & T. Chairman Frederick R. Kappel has talked to them.**



**And in London, Sir Edward Heath, Lord Privy Seal, has addressed them.**

# New Books

**BEAT THE DEALER**, by Edward O. Thorp (Blaisdell Publishing Company, \$4.95), describes "a winning strategy for the game of twenty-one." Its author was formerly an instructor in mathematics at M.I.T., and the reviewer is Philip Franklin, Professor of Mathematics.

THIS BOOK will be of interest to anyone who plays, or is learning to play, the game of blackjack, or Twenty-One, and who wishes to develop an improved strategy. The book makes no demands on the reader's mathematical background. With the exception of a few pages in the body of the book and a lengthy appendix, the discussion even explains simple algebraic formulas by arithmetic illustrations. And the parts of probability theory needed for an understanding of the conclusions are completely explained in simple terms.

The author also recognizes that readers will be content with various levels of sophisticated play requiring graduated amounts of time and effort to study. In fact, he presents two simplified forms of his system, in addition to the final form, for those wishing to stop after a portion of the full exposition.

The mathematically inclined reader will find many interesting details in the second appendix, and references to several technical articles containing the mathematical analysis which led to the strategies described. There are also a number of general references on probability, games of chance, and the detection of cheating.

Throughout the book, the technical discussion is spiced with anecdotes concerning actual play in casinos by the author and others. A number of these which pertain to the author's first extensive test of the system in Nevada are described in Chapter 6, much of which appeared as an article in *The Atlantic Monthly* of June, 1962.

The thesis of the book is that at any stage of the game, the player's chance on the next play depends on cards already dealt, so that he can improve his expectation by increasing his bet when the chances are favorable. The various stages of the system involve keeping track of certain critical cards, such as fives, or fives and tens. The evaluation of chances is largely based on a three-hour computation which the author, while at M.I.T., made on an IBM 704-type of high-speed electronic digital computer. Even if possible, an equivalent computation using desk calculators would have taken at least 10,000 man-years. The author and his friends have profitably tested out the system and its simplified versions in Nevada casinos. Even more convincing checks of the system have been made by extensive large-scale simulated play on computers.

The author gives many wise cautions, including the fact that the favorable expectation is only present in the long run with an honest game. He also asserts that widespread use of his system by customers would sooner or later lead to changes in the operation of blackjack games by casino operators.

**ASTRONOMY: A History of Man's Investigation of the Universe**, by Fred Hoyle (Doubleday, \$12.95), is reviewed below by Giorgio D. de Santillana, Professor of the History and Philosophy of Science at M.I.T.

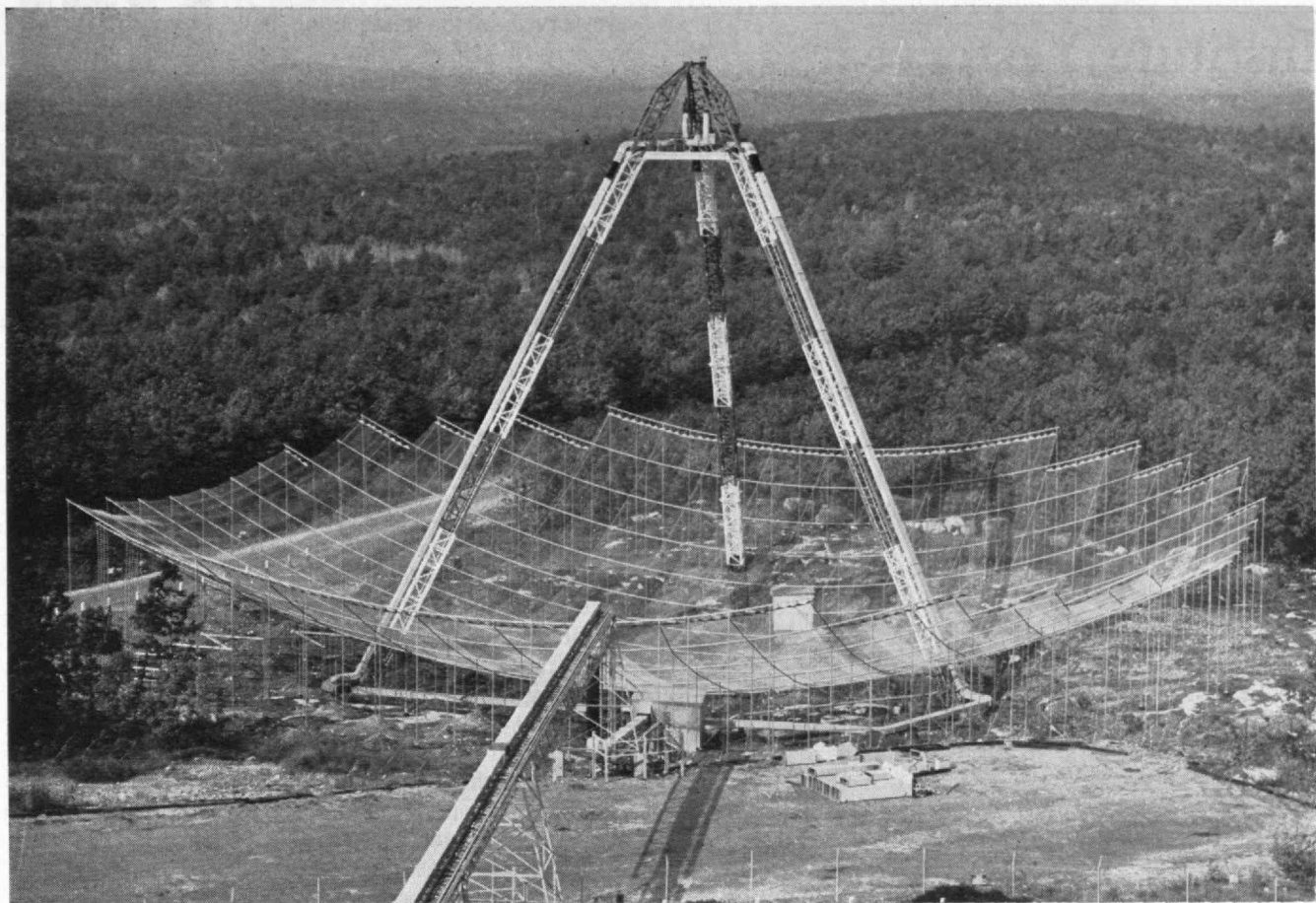
ONE FEELS for once like agreeing with the blurb: a "splendid marriage of words and illustration." The arresting name of Fred Hoyle who wrote the text of this book should not dim for us the name of the art editor, M. Kitson, modestly tucked away in a corner of the cover. These are no illustrations drawn from ordinary archives, but the result of far-ranging iconographic discernment, illustrating both in black and in color, many aspects of the activity of great astronomers. And where else would one find at once a reconstruction of that intriguing Egyptian device, the *merkhet*, and the autograph of Galileo's abjuration? The diagrams are also clear and excellent.

Fred Hoyle writes not only well, as usual: He shows also a strategic eye and masterly insight in the way of choosing and presenting his material even within the narrow limits of this text. He does not confine himself to easy generalities, but shows enough of the technical aspects of new ideas to allow the reader an independent judgment. See for instance, the treatment of Copernicus and Huygens. His respect for antiquity is very great. As he says, we are now "entirely willing to concede that men of the past, of the remote past too, were every bit as competent as we are." This remote past does not go for him beyond the Greeks, which may seem a bit arbitrary. But then his thought is mainly on cosmology, as one would expect. He is, in fact, so respectful of the ancients that his one technical appendix gives the mathematical theory of epicyclic astronomy as developed by Hipparchus and Ptolemy. On the other hand, the last three chapters, from "Stars as Thermo-nuclear Reactors" to "Galaxies and the Expanding Universe," are a straight presentation of contemporary cosmology, in which he has had so large a part.

It is interesting to compare Hoyle's treatment of the subject with popular presentations of a hundred years ago, like Flammarion's books. One realizes how much more the earlier ones are bathed in a literary atmosphere. Flammarion tells us really what people have thought about the starry sky, what impact the successive discoveries have had upon the life of culture through the centuries. Hoyle deals much more with the *business* of astronomy. He shows the process of thought in its discoverers; the context of culture is left to the illustrations. Two thirds of the text is really a history of physics, techniques and instrumentation, leading the mind rapidly from the solar system to the main problems of today, which are of nuclear physics and astrophysics over the whole visible cosmos.

The text shows both sureness and good judgment in the information, even in difficult spots. For the modern part, we feel, inevitably, Hoyle's own bias here and there. For the ancient past, the author had to rely on researchers whose names are listed, and any merits and mistakes take on a collective aspect. It shows good research to attribute the roundness of the earth to Parmenides and not to Pythagoras as is usually done. On the other hand, he who wrote, "Plato was out of sympathy with the Pythagorean school," seems not to have heard of the *Timaueus*. Eudoxus' spheres are well de-





**MODERN TOOLS** of scientists who study the sky include such devices as this 220-foot zenith-pointing antenna, built to

complete electron density measurements made by the Millstone radar at UHF, and used by Lincoln Laboratory.

scribed as a pure mathematical model, but Aristarchus' early heliocentric system must have been more than that, since the size of the sun discovered by Aristarchus himself justified dynamically its placement at the center. On page 97, F. M. Novara, Copernicus' teacher, becomes a lady astronomer, Maria da Novara. It is not true that Galileo did experiment with a stone dropped on a moving ship. He insisted that he could tell the result without having to experiment, nor did he really drop those weights from the Leaning Tower as the text implies; he came to his conclusions by pure reasoning. But here we go again with the old cliché of Galileo the empiricist.

The story of the Galilean crisis is told with great historical restraint and understanding, but someone did not do his homework, namely, read the "Crime of Galileo," and so some hoary falsifications are allowed to stand, to confuse a new generation. What is considerably more serious, Hoyle seems to think that Galileo discovered the inertial principle only in his very last years, so that when he tried to build up a Copernican cosmology he still had "no ground to stand on." This serves the obstinate campaign that even now tries to show him up as an intellectual adventurer. But it is not so, the inertial principle is clearly stated—and used—in the *Dialogue*, so that Galileo had good grounds to hope that his opponents would understand reason. It is strange to see this figure, so continuously beset with raging enmity, suffering unfairness even today at the hands of his friends.

**UNUSUAL CAREERS**, by Martha E. Munzer, '22 (Knopf, \$3), is a book for young people, reviewed here by Martin Mann, '41, of the Executive Committee of the National Association of Science Writers.

TO TECH MEN *Unusual Careers* may not seem very unusual. Most of these occupations—meteorology, geology, sanitary engineering, chemistry, city planning, for instance—are the subject of standard courses at the Institute. But Martha E. Munzer did not write the book for her fellow Alumni; it is aimed at junior high school youngsters. They will find quick glimpses of eight fields of work that, to most of them, will seem unusual and perhaps even romantic.

The approach is different from the usual pamphlet on "What It's Like to Be a Widget Engineer." Instead of describing the many areas of work open to a degree-labeled specialist, this book concentrates on each particular area of work and its opportunities for many different specialists.

Each chapter gives a general outline of the basic aim of the field and details on the advanced projects currently fashionable. In a few cases, this story is enlivened with short biographical sketches of outstanding personalities (Maria Telkes, Columbus O'D. Iselin).

The author's zeal for her own career at the Conservation Foundation shows clearly throughout the book: Concern for judicious use of natural resources is the running thread that ties it together.



# Institute Yesteryears

Edited by H. E. Lobdell, '17

## 25 Years Ago

THE REVIEW reported: "Meteorologists have suspected for some time that weather conditions on the American Continent are influenced by a high-pressure area which lies over the Atlantic Ocean off Bermuda, but until recently they had no means of accurately charting this body of upper air to test the theory.

"Development of automatic radiometeorographs which record barometric pressure, humidity, and temperature has made such a study possible. Delbar P. Keily, '34, of the Institute's meteorological staff, and Douglas S. MacKiernan, Jr., '36, have recently completed the first cross-section study of the Bermuda High.

"The study was made during a voyage of the Bull Line steamship, *Emilia*, from San Juan, Puerto Rico, to New York. For five days and four sleepless nights, Keily and MacKiernan sent sounding balloons bearing radiometeorographs into the Bermuda High. Twenty-five readings were taken at intervals of four to five hours, and each time a balloon was released the obliging captain of the *Emilia* ordered the ship's course changed to bring the wind abeam so that the balloons might float away without becoming tangled in the rigging."

¶ On January 5, 1938, *Willis R. Whitney*, '90, and *Frank J. Chesterman*, '05, were elected life members by the Institute Corporation.

¶ Congratulations were being extended to *William C. Potter*, '97, upon his becoming a director of the Federal Reserve Bank of New York . . . to *Howard H. Brown*, '06, chosen as vice-president of the Society of Naval Architects and Marine Engineers . . . to *Clarence D. Howe*, '07, named as an honorary member of the Engineering Institute of Canada . . . and to *Theodore P. Wright*, '18, and *George J. Mead*, '16, who took office, respectively, as president and vice-president of the Institute of the Aeronautical Sciences.

## 50 Years Ago

IN JANUARY, 1913, *Frederic H. Fay*, '93, became the 20th president of the Alumni Association, with *William H. King*, '94, vice-president. *Walter Humphreys*, '97, was re-elected as secretary-treasurer, in which portfolio he served the Association from 1907 to 1923. The alumni term members nominated for the Corporation were: *Charles T. Main*, '76; *Cass Gilbert*, '80; and *Charles Hayden*, '90.\*

¶ On January 18, the 38th Annual Banquet of the Alumni Association took place at the Hotel Plaza in New York. As reported by *The Review*, "527 dinners

\* Later, King was nominated as a term member of the Corporation, in 1915; Main and Hayden were elected life members, respectively, in 1911 and 1913; and Hayden served as the 32d president of the Alumni Association in 1925-1926.

were served in the banqueting hall, and although 80 men arrived without tickets after 7:30, every one was seated with his own class without delay or confusion."

In his address, President *Richard C. Maclaurin* said: "The year has been such a phenomenal one that its main events stand out with such prominence that they have already been seen by all.

"Such events are the establishment of an unrivalled summer camp in Maine, and its complete equipment, by two of our Alumni; the successful carrying through of negotiations for the purchase of a tract of nearly 50 acres as the site for the new buildings of the Institute; the extraordinary good fortune of Technology in being able to secure at so reasonable a price (three-quarters of a million dollars) a site so ideally placed for our purposes and with such magnificent possibilities for future development; the great bequest of Mr. Pratt for the endowment of Naval Architecture—a bequest that means much for the nation if it is to take its proper place on the high seas; the strengthening of the heart of the Institute (the Faculty) by the addition of men of national and international reputations . . .

"All these events have been surpassed in dramatic interest by the splendid gift of 'Mr. Smith,' a gift the interest in which has been greatly stimulated by the circumstances in which it was made. I have seen in some of the papers that I am expected to reveal 'Mr. Smith's' identity at this banquet, but I hesitate to deprive you of the pleasure of guessing and I am constrained to say that the guesses that have been made to me have done more than anything else to convince me that the advantage of a scientific training has its limitations. It seems, indeed, as if it were no advantage at all to a man when he goes into a guessing competition."

## 75 Years Ago

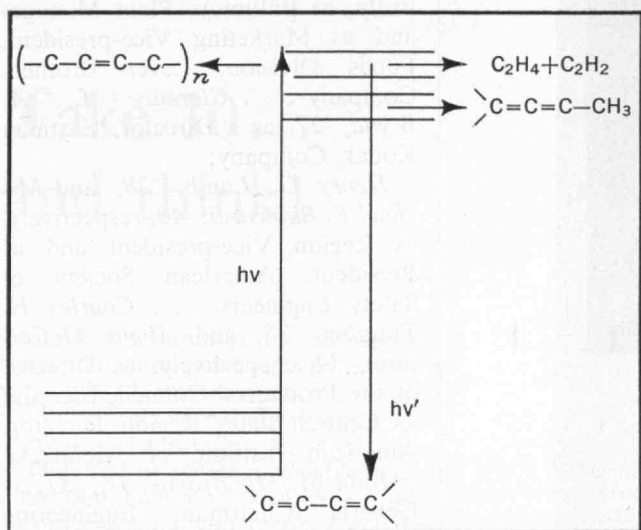
"THE SEMIES are now upon us, and for the next week the Techs will be miserable and unhappy until they are finished. Many unfortunates," continued the editor of *The Tech*, "are burning the midnight oil and making up for lost time; but the wise man, who has not fallen behind, looks over a few notes, and goes into the examination comparatively calm. But from one and all comes the wail, 'examinations do not examine.' Well, we think they are about right; but what are you going to do about it? . . .

"We venture to prophesy that the man who does invent a satisfactory examining and marking system will be very popular. But, until that man appears, we will all have to take our examinations which do not examine; and so *The Tech* wishes you all the best of luck in these coming now."

¶ Random jottings gleaned from adjoining news columns of *The Tech*:

"The Orchestra is reported to be getting along swimmingly. It contains at present about 20 pieces. . . . The 'quiet' reading-room is at last worthy of its name. An office has been fitted up in one corner, in which there is always some instructor. 'And now peace reigns in the halls where turbid violence once had its sway.' . . . It is said that both Institute buildings are to be lighted by electricity. . . . The sophomores tried to hang a flag between the two buildings, but the janitor was too much for them."

## How can we determine the course of reactions?

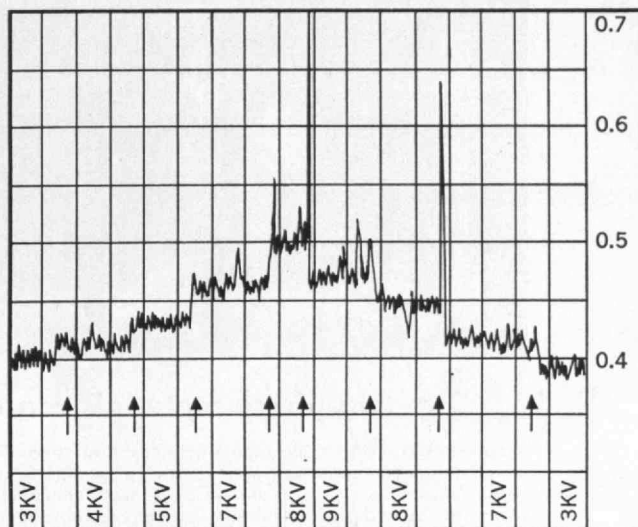


*The Excited State.* This sketch describes possible behavior of molecules of butadiene upon absorbing light energy. Within 1 microsecond, they may undergo either polymerization, isomerization, or decomposition.

Organic materials are a potential source of new high-speed components for data processing systems. The discovery of these components will depend on a detailed understanding of the physical properties of both known chemical systems and new systems. To help develop this understanding, IBM is investigating the mechanism of energy transfer which occurs when light is absorbed by organic molecules.

An organic molecule can react to a quantum of energy in a number of ways, as shown above. In one project, aliphatic dienes and trienes are exposed to ultraviolet light. Then the effects produced by the wave length, pressure, and temperature are determined. This study will also help to define the conditions required for photochemical synthesis of unusual compounds.

In another project, scientists are studying the physical properties of materials in the excited state. The shift of an isolated absorption band due to an applied electric field has been observed for an organic dye molecule dispersed in a solid matrix. This was the first time that this shift, known as the Stark Effect, had been observed in an organic solid. The organic dye (methyl red) was imbedded in a non-polar transparent plastic film. A high-voltage D.C. field was applied, and the resulting changes in optical density were measured with a spectrophotometer. The spectrogram is shown above. Anticipation



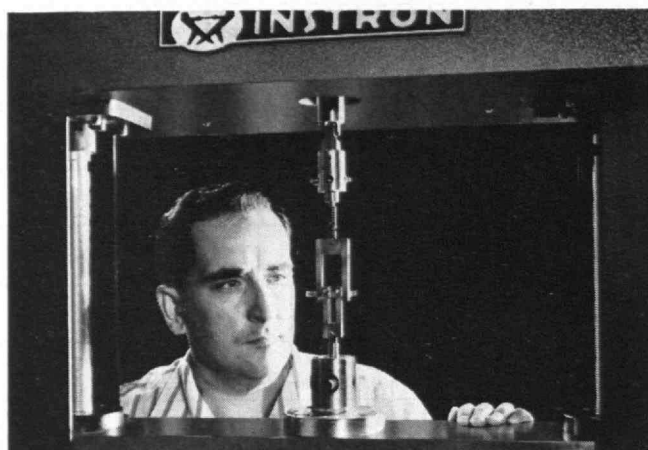
*The Stark Effect.* This spectrogram shows changes in optical density of methyl red at the absorption edge of the band. Similar measurements on the opposite edge of the band indicated a shift to the red rather than a band broadening.

of these results led the scientists to conclude that the static dipole of methyl red does not change significantly between the ground and excited states. Instead, the induced dipole moment changes, becoming much larger in the excited state. The development of this technique provides science with an additional independent physical parameter which can be used in the study of excited states of organic molecules.

IBM scientists are also investigating the chemical changes which take place when adsorbed gas molecules are elevated into excited states. They have examined mechanisms by which a polymer film is formed on a surface exposed to ultraviolet light in the presence of butadiene. Their results indicate a mechanism of selective surface photolysis in which reaction of the adsorbed gas occurs. From research like this will come new insights into the formation of new types of thin films which may prove to be of great importance in cryogenic and microelectronic devices.

If you have been searching for an opportunity to make important contributions in chemistry, mechanical analysis, programming systems, or any of the other fields in which IBM scientists and engineers are finding answers to basic questions, please contact us. IBM is an Equal Opportunity Employer. Write to: Manager of Professional Employment, IBM Corp., Dept. 615A, 590 Madison Avenue, N.Y. 22, N.Y.

# The Challenge of the materials age



## The two-phase materials concept

In this sixth year since man's first probe of space — an age in which structural materials *must* do the impossible — attention is being focused increasingly on the two-phase concept of material structure. A two-phase structure is a combination of two different materials of contrasting strength and elasticity. The result is a composite which produces a material whose properties are superior to either of its components used individually.

Sounds like a great new idea? "Great" it is — but "new" it isn't. Nature had it first, millions of years ago.

The two-phase concept is at least as old as, say, bamboo . . . a natural two-phase material combining cellulose fibers of high tensile strength in a matrix of lignin, which serves to cement the structure and provide elasticity.

Filament-wound glass fibers are an example of artificial two-phase material, in which glass fibers are combined with epoxy resin to form a material whose specific strength is two and a half times greater than that of any homogeneous material, including metal, glass, or plastic.

In applying the two-phase principle to space applications, the extraordinary properties of single-crystal filaments — (more informally called whiskers) as reinforcing agents, is attracting more and more attention. Whiskers are among the strongest materials known. Some are capable of withstanding stresses of several million pounds per square inch. And happily, some of them tend to retain much of their strength at very high temperatures.

Much of the exploration now being conducted on the problem of two-phase materials is being carried out with the aid of Instron equipment.

Instrons are sensitive and highly accurate testing instruments suitable for broad range of stress-strain studies. These include not only studies on single whiskers and high strength alloys, but in such areas as high polymer rheology, refractory metals and ceramics, textile fibers, and biological tissues.



For a detailed study of current research in the development of two-phase materials, we invite you to write for your free copy of Bulletins C-3 and PC-8 — examples of a series of application studies compiled by Instron from independent sources covering virtually every area of materials research. For bulletins describing late technical developments in your specific fields, please feel free to drop us a line.



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## Individuals Noteworthy

(Continued from page 6)

### New Posts

NAMED in the news of promotions, elections, and appointments recently were:

*Charles E. Keniston*, '26, and *H. Gordon Scowcroft*, '35, respectively, as Baltimore Plant Manager and as Marketing Vice-president, Foods Division, Lever Brothers Company . . . *Clarence L. A. Wynd*, '27, as a Director, Eastman Kodak Company;

*Henry G. Lamb*, '28, and *Michael F. Biancardi*, '40, respectively, as Region Vice-president and as President, American Society of Safety Engineers . . . *Charles H. Topping*, '28, and *Angus McCallum*, '34, respectively, as Director of the Producers' Council, Inc. and as Central States Region Director, American Institute of Architects;

*John M. MacBrayne, Jr.*, '31, as General Chairman, Engineering Division, Technical Association of the Pulp and Paper Industry . . .

*Jack I. Hamilton*, '36, as Vice-president-Staff, Director, and Secretary-Treasurer, Menasco Manufacturing Company, Burbank, Calif. . . . Rear Admiral *Antonio Marin*, '38, as Vice-Dean, School of Engineering, University of Buenos Aires;

*Chester A. Williams, Jr.*, '39, as Chief Patent Counsel, Singer Manufacturing Company . . . *Monroe S. Sadler*, '42, as Director of Materials Research, E. I. du Pont de Nemours and Company . . . *Douglas M. Surgenor*, '46, as Dean of Medicine, University of Buffalo;

*William H. Enders*, '50, as Manager, Marketing, RCA Laboratories, Princeton, N.J. . . . *William H. Gable*, '51, as Director of Engineering, Aircraft Armaments, Inc. . . . *Alan J. Roberts*, '51, as Head, NORAD Command System Department, The MITRE Corporation;

*Stanley I. Buchin*, '52, as Assistant Professor of Business Administration, Harvard University . . . *Robert N. Noyce*, '53, as Trustee, Grinnell College . . . *Robert J. Richardson*, '54, as Assistant Manager, Kingston Works, Du Pont of Canada, Limited . . . *Fred B. Bialek*, '56, as Manager, San Rafael Diode Plant, Fairchild Semiconductor.

(Concluded on page 34)



## Take 10... and think!

It's so easy to let things go . . . to postpone the things you know you ought to take care of. Your family's future security, for instance.

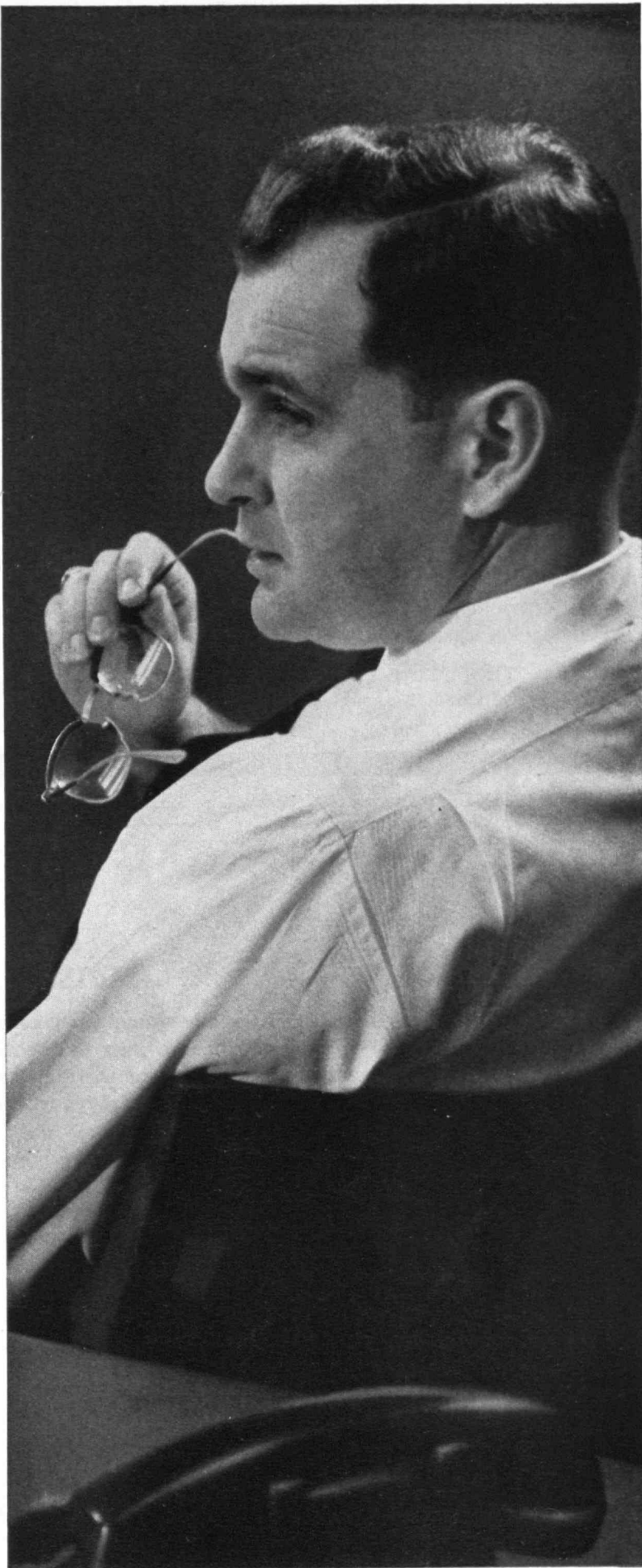
If you have procrastinated, why don't you take 10 right now and talk with a CML man. He can help you arrive at a sensible answer to the question, how much and what kind of life insurance should you own? You'll find him sympathetic, understanding, and exceptionally able . . . a good man to work with.

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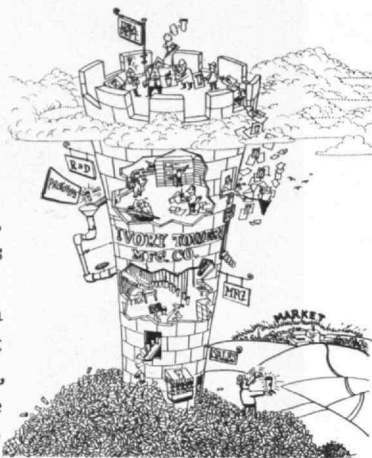
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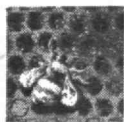


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## Individuals Noteworthy

(Concluded from page 32)

### Honors to Alumni

RECIPIENTS of recent awards and similar distinctions have included:

*Frederick E. Terman*, '24, the Founders Award by the Institute of Radio Engineers . . . *James B. Fisk*, '31, the 1963 annual medal of the Industrial Research Institute, Inc. . . . *Robert D. Fletcher*, '41, the Air Force Decoration for Exceptional Civilian Service;

*James G. Terrill, Jr.*, '41, the Meritorious Service Medal by the U.S. Public Health Service . . . *James T. Duane, Jr.*, '53, named as the Outstanding Young Electrical Engineer of the Year by Eta Kappa Nu Association . . . *Rudolf E. Kalman*, '53, named as the State's Outstanding Young Scientist of 1962 by the Maryland Academy of Sciences.

### Luis de Florez: 1889-1962

A NOTED INVENTOR and active alumnus of M.I.T., Rear Admiral Luis de Florez, '11, died last December 5 after being found unconscious in his two-engine plane on an airport runway at Fishers Island, N.Y. His interest in aviation dated from his student days and never waned.

Admiral de Florez was most widely known for his wartime work, which included the development of many devices for training Navy pilots, but he also had contributed notably to oil refining and done much to stimulate creative work by others. He was an alumni term member of the M.I.T. Corporation in 1949-1950 and 1950-1951, and last May was honored at a gathering in the M.I.T. Faculty Club to celebrate his completion of 50 years in aviation.

He is survived by his widow, the former Marian King; a son, Peter de Florez, '38, and a brother and two sisters.

### Alumni in the News

HENRY H. PLOTKIN, '57, of the Goddard Space Flight Center, will direct an experiment in satellite tracking with a pulsed, ruby laser when the S-66 Polar Ionosphere Beacon Satellite is launched this year. . . . *Charles H. Topping*, '28, as chairman of the Franklin Institute's Committee on Science and the Arts, introduced former medalists at the Institute's Medal Day dinner last fall.

## *The best brains in town are working free tonight*

In cities and towns all over America you'll find men like these — men who are willing to put aside the evening paper, cast a backward glance at their favorite armchair, and go off to help solve a community problem.

They're merchants, lawyers, businessmen. Together, they can do almost anything — except say "No" when the town asks for their help. They're the men you can really count on when you need a new hospital. A new school. A new church. All too often the efforts of these unselfish, public-spirited Americans are taken for granted — when the truth of the matter is the community simply couldn't do without them.

When community leaders ask that all-important question "Who can we get to help with . . . ?", a Massachusetts Mutual man often comes to mind. For the Massachusetts Mutual man knows his neighbors, and they know him. They trust him, and trust his judgment.



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Harold Goodheim, '39, San Francisco

Harold G. Ingraham, Jr., C.L.U., '49, Home Office

Ross E. Voyles, '53, San Francisco

### LEHIGH

Russell E. Hoaster, C.L.U., '31, San Antonio

Edward Billstein, Jr., '40, Atlanta

R. Lester Dodson, Jr., '44, New York

### LAFAYETTE

David B. Adler, C.L.U., '17, Orlando

Frederic F. Lawall, '22, New York

David K. Aldrich, C.L.U., '38, Allentown

Frank W. Hiller, '43, Home Office

Richard A. Faust, '56, Binghamton

Aman M. Barber, Jr., '59, Allentown

Cameron D. Warner, '61, Bethlehem



## Useful Knowledge

(Concluded from page 11)

human drive towards goals and ideals which may seem far from practical. Many of those who launched the society in which we now flourish must have seemed to the ordinary citizen, particularly those comfortably back home in Europe, the most impractical idealists. Judgment of the "useful" at times requires the greatest subtlety and thoughtfulness.

In the field of science and technology, I regret to say that one sees from time to time research of small scale but possibly great importance elbowed out by the bustle of obvious immediate problems or something in a favored budgetary category. And if we sometimes falter in understanding the long-range value of fundamental scientific knowledge, which fortunately is reasserted by constant examples such as the maser, how badly do we fail in areas which are less clear and compelling?

In the tense and dangerous world of which we are a part, our effort in military defense may or may not be adequate, but at least it is vigorous, for there is much about its value which is obvious, immediate, and easily understood. With how much comparable clarity can we understand or with what vigor pursue those things of longer-range value? In these circumstances, how "useful" and cogent are poetry, religion, or humanity? A medieval Japanese scholar, Takawan, gave advice on this score in a simile appropriate to his time: "When your opponent is at the point of striking you, let your mind be fixed on his sword and you are no longer free to

master your own movements, for you are then controlled by him." Swords are obviously dangerous and must be dealt with. But it would be tragic to allow fixation on the direct and obvious steps to distract us from undertaking with energy those which may be less obvious but more important. How excited are we about the goals, the attitudes, the paths which are most likely in the long run to lay a basis for the kind of world we seek?

We Americans have something of a reputation and can pride ourselves in being practical-minded. This is good. Particularly in tough situations, we like to "keep our eye on the ball" and be "hardheaded realists." Also good. But there is still a problem. When do "hardheaded realism" and "keeping one's eye on the ball" degenerate into only a variety of thick-skulled myopia?

## Have You Seen These Books?

RECENT publications especially likely to interest Alumni of M.I.T. include:

*The Evolution of an Architect*, by Edward D. Stone, '27 (Horizon Press, \$15).

*Statistical Management of Inventory Systems*, by Harvey M. Wagner, '60, Associate Professor of Business Administration, Industrial Engineering, and Statistics, at Stanford University (John Wiley & Sons, Inc., \$8.95).

*Streetcar Suburbs: The Process of Growth in Boston, 1870-1900*, by Samuel B. Warner, Jr., of Harvard (The M.I.T.-Harvard Joint Center for Urban Studies, \$6.50).

*Louis Sullivan [1874]: An Architect in American Thought*, by Sherman Paul (Prentice-Hall, \$4.50; paperback, \$1.95).

# albert

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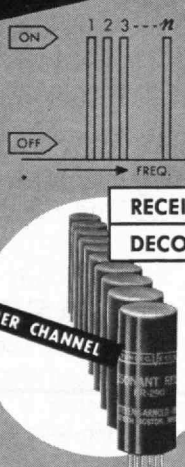
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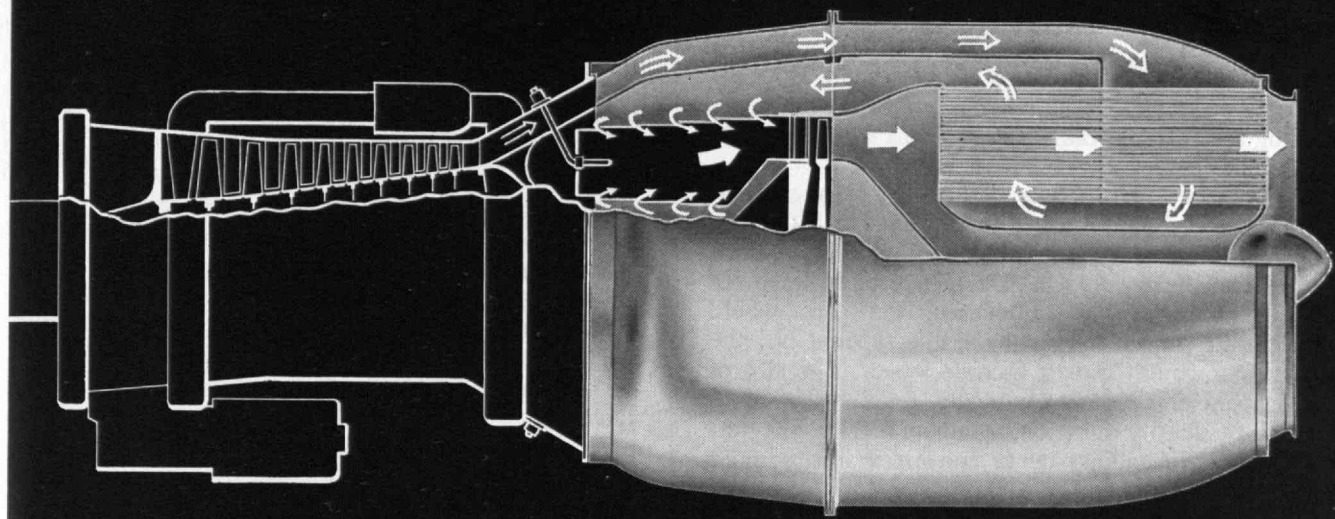
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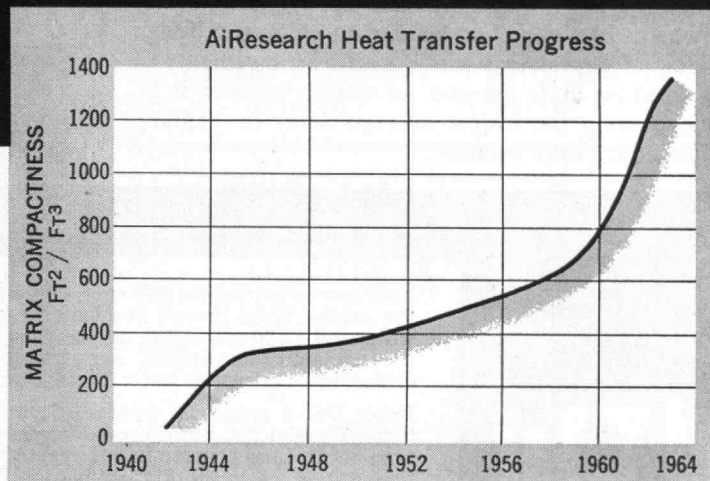
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Garrett-AiResearch is working on recuperator optimization programs with more than half the military and industrial gas turbine manufacturers in North America, and is fabricating and testing complete units. For further recuperator information, write to the AiResearch Manufacturing Division, Los Angeles.



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## Computer Models of Future Roads

(Concluded from page 22)

ion. It attempts to reproduce the happenings on the roadway (typically at an intersection, a ramp, or a merging area) inside the machine in the same way that they occur in real life.

If, for instance, you observed the gaps between vehicles as they drove past an entrance ramp to a freeway you would find some gaps were long and some short, but most of them would be somewhere in between. In general, as the volume increased, the gaps would shorten and conversely, as the traffic tapered off, the gap lengths would tend to become longer. The size of such gaps can be mathematically represented by a probability density function. Mathematically integrating this function allows us to convert it into a more useful form of a cumulative graph showing the probability of a gap of less than a certain length versus gap arrival length. Then, using random numbers with which to enter the probability axis of the graph, we can recreate the arrival gap lengths in the same frequency that they occur in nature.

The process of simulating freeway ramp traffic involves essentially this kind of a process. It is called a Monte Carlo simulation model because of its similarity to gambling games, but it can help the engineer understand what is occurring and be useful to him as a design tool. He can experiment with various arrangements of ramps until he finds the one he wants, whether it be the one causing the lowest average delay or yielding the maximum ramp volume.

It seems now that congestion never can be completely eliminated. As soon as a new expressway is built, the cars are there to fill it up. Most officials believe that the elimination of all congestion would be prohibitively expensive. Good planning, however, can reduce congestion to a more tolerable level.

Models of the highway transportation process will some day allow the engineer to do whole-scale experimentation on entire systems without disturbing the flow on present streets. Parameters will be measured which never could be measured in real traffic regardless of the amount of instrumentation. Such things as total system delay, average vehicle delay, total system cost, and average travel time may be evaluated.

Computer models offer the road designer something which he has never had before, a test laboratory where new designs can be tried before they are built. Instead of millions of dollars worth of concrete and steel, only a few hours of computer time will be expended. Our increased ability to measure the consequences of a proposed change will also result in both more economical allocation of our resources and a smoother functioning transportation system. In the long run, accurate predictive models may even help remove much of the political controversy presently surrounding public works improvements and reduce the decisions to an orderly planning process.

*NEXT MONTH: Samuel Jay Keyser will report in Technology Review how a computer can be used to reproduce handwriting, verify signatures, and replicate to an amazing degree a portion of human behavior.*

# NEW

This new construction prevents water passage through the LENGTH of the cable. Even though accidentally severed, the new DSS-3 cable will withstand 1,000 psi on the exposed end. This unique construction reduces the possibility of flooded compartments or damage to instruments or critical mechanisms by water flowing through the cable due to high pressure.

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- TV CAMERA CABLES** — pressure resistant, with or without strength members
- WATER TIGHT COAXIAL CABLES**
- FATHOMETER CABLES** — shielded, 2 conductors
- ARMORED FLOATING TOW CABLE** — one inch O. D. cable containing 15 conductors and 3 coaxes.

BIW has had long experience in the design and manufacture of special cables to meet unusual underwater applications. We will be happy to send complete information on the work we have done. Our engineers will be glad to work with you toward the solution of your problems.

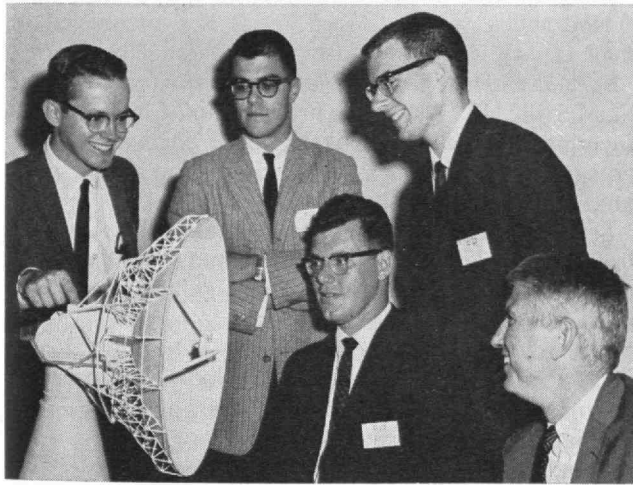
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## M.I.T. People as Seen in the News



GEORGE R. WALLACE, '13, recently dedicated a computer control center to improve papermaking at the Fitchburg, Mass., plant of the company that he heads.



THOMAS W. HARRINGTON (right) of M.I.T. met recently at Raytheon with (from left) Kenneth Molloy, '59, W. Krolikowski, '61, T. D. Laase, '61, and R. Markley, '61.



SUSAN HEMLEY, seen here in a physics laboratory, is at 15 the youngest and probably the most frequently photographed of M.I.T.'s freshmen. She is from Forest Hills, N.Y.

# GEARS

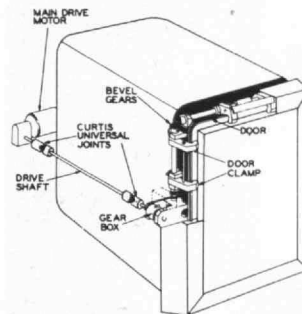
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## The Trend of Affairs

(Continued from page 17)

### Special Seminars for Freshmen

MORE THAN a third of this year's freshmen at M.I.T. are participating in an Undergraduate Seminar Program begun experimentally last year. Forty-two seminars for groups ranging in size from two to 15 are being run on a voluntary basis by members of the Faculty. The purpose is to increase student-faculty association on a less formal basis than is possible in a regular classroom and give the freshmen a chance to use their own initiative in research ventures. Topics taken up and Faculty participants in such seminars last fall included:

*Modern Marvelous Mechanical Motions*—Douglas P. Adams, Associate Professor of Engineering Graphics, relates intriguing and unusual geometry problems to mechanisms.

*Microbiology in Space Exploration*—Cecil G. Dunn, '30, Associate Professor of Industrial Microbiology, investigates microbiology's role in food supply, oxygen regeneration, and waste disposal in space travel.

*Experimental Studies*—Arthur T. Ippen, Professor of Hydraulics, sets up a series of four experiments for small groups in various Institute research laboratories.

*Special Engineering Problems in Medicine*—Edward W. Merrill, '47, Associate Professor of Chemical Engineering, and Giles R. Cokelet relate engineering concepts to such problems as blood circulation and respiration.

*Sensory Reception*—William T. Peake, '51, Assistant Professor of Electrical Engineering, studies the detection of sensory stimuli in such examples as bat sonar, bird navigation, and human color vision.

*American Folk Songs and Ballads*—Theodore Wood, Jr., Associate Professor of English, looks at American folk music as music, literature, and social history.

What happens in such seminars?

None is typical but *Crystals, Lasers, and Masers* offered by Robert E. Newnham, Assistant Professor of Electrical Engineering, is representative. Its members hear talks about crystals, tour such facilities as the Laboratory for Insulation Research and the National Magnet Laboratory, and both build models and grow crystals from solution. The program introduces them to a variety of research activities, shows them some justification for other undergraduate studies, and helps them decide on a major field. In addition, their instructor hopes, they get from their study of the symmetry of crystals "some feeling for the beauty and harmony in nature."

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**BOX F, The Technology Review**



**VINCENT G. KLING, '41**, was the architect of the circular buildings erected for the American Baptist Convention's offices at Valley Forge, Pa. They have attracted much attention as an example of modern concrete technology.

### News You May Have Missed

SEVENTY members of five M.I.T. fraternities helped trim and beautify the park area along the Fenway in Boston's Back Bay last fall, to advance Mayor Collins' campaign for a cleaner city. . . . The American Alumni Council reported that in 1960-1961 only Yale, Harvard, and Princeton received larger sums from their Alumni than the \$6,950,563 that M.I.T. received from its Alumni. . . . Nearly 600 high school students signed up last summer for free non-credit courses in college subjects, taught by M.I.T. students, directed by Elliott H. Bird, '63, and sponsored and financed by the Technology Community Association. . . . The MUTS (M.I.T. Undergraduate Tiddlywink Society) lost its first match, 14 to 7, to the WITS (Women's Intermediate Tiddlywink Society) from Simmons, but looked forward at this writing to matches with Harvard's GUTS (Gargoyle Undergraduate Tiddlywink Society), et al.

*(Concluded on page 42)*

## ATTENTION

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#### COMBINE SELLING AND DESIGNING

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BOX Z

THE TECHNOLOGY REVIEW

# coming . . .

## THE THEORY OF PLASMA WAVES

By **THOMAS H. STIX**, Princeton University. Advanced Physics Monograph Series. Available in January, 1963.

Treatise is concerned with the small-amplitude oscillations of a collisionfree plasma immersed in a strong static magnetic field. After a survey of waves in a cold plasma, attention is turned to the general description of energy flow through anisotropic inhomogeneous media, and then to the detailed normal-mode solutions of some illustrative boundary-value problems. The second and major portion of the work deals with the finite-temperature plasma, starting from the Boltzmann-Vlasov equations. Throughout the book, much attention is devoted to the physical interpretation of the mathematically-derived results, and a number of brief exercises, presented at the end of each chapter, have been selected to intensify the important principles. Extremely useful both as a graduate-level classroom text and as a reference work for scientists in the field.

## INTRODUCTION TO COMPUTER PROGRAMMING

By **RICHARD V. ANDREE**, University of Oklahoma. Available in February, 1963.

This brief book is intended to remove some of the mystery that has been created concerning computers and computer programming and to serve as a four lesson introduction to the art of writing instructions for a digital computer. The author considers the development of computers as "the world's most important advance since the beginning of the industrial revolution." The book is well illustrated and features a good variety of problem material.

## PLASMA PHYSICS AND MAGNETOFLUIDMECHANICS

By **ALI BULENT CAMEL**, Northwestern University. McGraw-Hill Series in Missile and Space Technology. Available in March, 1963.

The text indicates how the subject of cosmical electrodynamics may be utilized in developing various technological devices. It coordinates the many aspects of magnetofluidmechanics into a systematic and clear approach. Although primarily an introductory textbook for the student of engineering, it will also prove to be a very useful source book for the practicing engineer. Considerable attention has been given to plasma physics because the engineering devices being developed will, by and large, utilize ionized gasses as working media. Consequently, the viewpoint followed is primarily that of a thermodynamicist-fluidmechanician rather than that of a hydrodynamicist.

## SOLIDS UNDER PRESSURE

Edited by **WILLIAM PAUL**, Harvard University; and **DOUGLAS WARSCHAUER**, Raytheon Company. McGraw-Hill Series in Materials Science and Engineering. Available in April, 1963.

Provides a review of past work in the field of solids under pressure coupled with informed speculation on the best directions in which to employ the techniques now available. It is composed of a series of fairly long articles by the most prominent men in the field. Each article reviews a particular phase of investigation centered around the author's own specialty; referring only briefly to techniques, and not necessarily reporting the latest data. Instead they give a condensed, but readable, resume of the meaning and significance of the old and try to extrapolate the probable line of progress in the next few years, particularly in the ultra-high pressure ranges now becoming available.

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## Trend of Affairs

(Concluded from page 41)

### A Humanist Addresses Alumni

OUR BUSINESSMEN need more understanding of the real meaning of American culture and sensitivity to the values of other cultures, Howard Mumford Jones, who has been Visiting Carnegie Professor of Humanities at M.I.T. this term, told the Alumni Association at its 362d meeting last November 26. Yet the emphasis has been placed elsewhere, he observed, and federal expenditures are frequently going for services rather than to aid education.

William L. Taggart, Jr., '27, presided. George W. Knight, '24, reported that 4,273 Alumni had contributed \$120,000 to the 1963 Alumni Fund; and Gregory Smith, '30, submitted 21 nominations to the 1963 Alumni Day Committee which the Council approved.

Mr. Smith has succeeded Edward O. Vetter, '42, as chairman for M.I.T.'s 1963 Alumni Day, as a result of the latter's resignation to assume new duties in Texas. Associated with Mr. Smith will be F. Leroy Foster, '25, as deputy chairman, and these subcommittee chairmen: Paul Wing, Jr., '34, banquet and entertainment; Donald S. Cunningham, '26, luncheon; Robert W. Reynolds, '30, publicity; and Wolcott A. Hokanson, registration.

### M.I.T. Aids United Fund

F. LEROY FOSTER, '25, Director of the Division of Sponsored Research and the Lowell Institute School, led the 1962 United Fund Drive at M.I.T. during which the Institute community contributed \$75,000.

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## Foreseeing Public Opinion

BEHAVIORAL scientists are ready now, thanks to recent improvements in their techniques, to help make public relations more of a profession and less of an art, Professor Ithiel de Sola Pool told the Public Relations Society of America when it met last fall at M.I.T.

The use of computers, which can handle more data and consider more variables more swiftly than a person, is increasing the usefulness of public opinion surveys, he reported. So, too, are the growing archives from which results of previous surveys can be drawn.

With a computer's help, he continued, it is now possible to answer "what if" in addition to "what is" questions about public opinion. By using a computer to simulate a community controversy such as might arise over fluoridation of water, he explained, the effectiveness of various strategies can be foreseen. Similarly, different "media mixes" in an advertising campaign can be evaluated by a computer before a choice is made.

Few politicians over 50 years old like or use public opinion polls well, he has noted, but most politicians under 50 are avid consumers and skillful users of them. Election night computer studies for The New York Times, in which Professor Pool participated last fall, revealed very quickly, he said, that President Kennedy's handling of the Cuban crisis had not affected the outcome of the election in the same differential way as his handling of the steel crisis. The latter, he explained, had cost the Democratic party the votes of many businessmen, but increased its strength among low-income groups, and thus sharpened class lines.

## The 95th M.I.T. Alumni Club

THE M.I.T. Alumni Council, at its meeting last October 29, officially recognized the M.I.T. Club of Bangkok—bringing to 95 the number of M.I.T. Clubs—and the new club's members met that same evening in Thailand to celebrate the occasion. They were represented in Cambridge by Luang Videt-Yontrakich, the Education Counselor of the Royal Thai Embassy in Washington.

Luang Videt-Yontrakich is the name given by the Emperor to S. B. Punyagupta, '24, and he addressed the Council briefly at the invitation of its President, William L. Taggart, Jr., '27. After receiving his bachelor's and master's degrees from M.I.T., Luang Videt-Yontrakich became an assistant engineer with the Royal State Railways of Siam and continued his studies at Thamasart University in Bangkok. Before coming to his country's embassy in Washington, he was for eight years chief civil engineer of the State Railway of Thailand, and a member of numerous missions to other countries. The per capita income of his country is low, he pointed out, but the new club can assure M.I.T. Alumni a hearty welcome if they visit Thailand. Carroll L. Wilson, '32, sponsored the new club and presented its charter to its representative.

At this same meeting, the Council recognized the new Route 128 Club of M.I.T. as a third associate club; received the report of the audit of Alumni Association books from Dwight C. Arnold, '27; a report on the Alumni Fund from D. Reid Weedon, Jr., '41; and was addressed by Professor Hans-Lukas Teuber, Head of the Psychology Section and Psychophysiological Laboratories at M.I.T.

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## New Books

(Continued from page 29)

**STRATEGY AND STRUCTURE**, by Alfred D. Chandler, Jr. (*The M.I.T. Press*, \$10), is subtitled "Chapters in the History of the Industrial Enterprise." Its author is professor of history at M.I.T.; and the reviewer, James G. Kelso, is assistant to the Chairman of the M.I.T. Corporation.

THE SCIENCE of business management has so plumbed the phenomenon of decentralized corporations that any reader of the *Harvard Business Review* can lucidly discuss the pros and cons of "decentralized" versus "centralized" corporate structure. Yet, despite the plethora of literature, little is known of the evolution of administrative practices of modern American industry.

Alfred D. Chandler, Jr., specialist in business history, partially remedies this deficiency with his monograph, *Strategy and Structure*, an admirable study of the methods by which some of the country's largest corporations have given effective administration to their large-scale operations. He places this chapter of business history squarely in the main stream of American economic history.

Our large industrial firms, he believes, have been affected more by "the market, the nature of their resources, and their entrepreneurial talents" than by antitrust laws, taxation, labor and welfare legislation, and comparable evidences of public policy. He finds the history of American industry can be written in four chapters: initial accumulation of resources; uses of these resources; expansion into new markets; and finally, development of an administrative structure to utilize effectively the resources which meet the myriad demands of the modern market. In discussing the last phase, Professor Chandler raises two important questions: What form of organization was developed in the American business scene, and why in certain instances was it so long in coming? It is his belief that not until Alfred P. Sloan, Jr., '95, created a new organizational control in 1920 at General Motors was there an effective administrative control over a large industrial consolidation to meet conditions of the times.

The author began his study as an experiment in writing comparative business history, but expanded the scope into a full-fledged investigation of the administrative structure of American industry—of some 70 of the nation's largest industries covering the last century, with concentration on Du Pont, General Motors, Standard Oil of New Jersey, and Sears Roebuck. Between 1919 and 1930 each of these giants entered times of trouble; for each, business success demanded expansion, which in turn required reorganization of their administrations. Independently, all moved towards a novel and nearly identical form of business administration, which was copied by others, notably in the automotive, electronic, electrical, and chemical industries.

These four companies developed what in business parlance today is known as the "decentralized" corporate structure, whereby a general office plans, co-ordinates, and appraises the work of operating divisions, and allocates the needed facilities, personnel, funds,

(Concluded on page 47)

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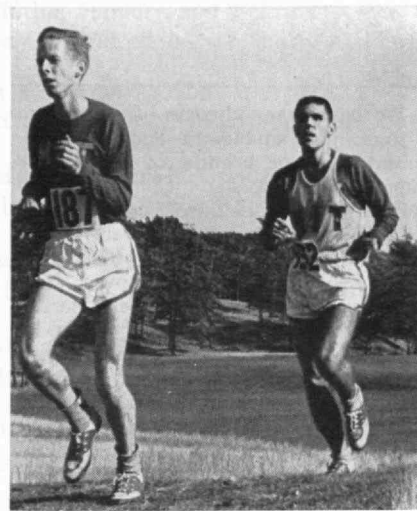
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# Tech Shines in Soccer, Cross Country, Sailing



**M**I.T. STUDENTS ended a satisfying fall sports season in November, in which the soccer team won six games, lost one, and tied one; the cross country runners were credited with several outstanding individual performances, and Captain Ken Klare, '63, of the sailing team was the top individual skipper in events which included the Danmark Trophy and the Schell Trophy Regattas.

Bob Mehrabian, '64, who is pictured in action at the right above, was New England Soccer League's lead-

ing scorer in 1961. Mehrabian is Captain-elect for the 1963 season. In all of Charles Batterman's six years as varsity coach, the soccer team has been successful and this year it was considered a possible sectional representative in the National Collegiate Tournament but was rejected because of a late season loss.

Cross country men included Roger Hinrichs, '63, in front, and Charles Sigwart, '64, Captain-elect for 1963, who are shown above. W. Sumner Brown, '66, finished first six times in dual meets.

## New Books

(Concluded from page 45)

and other resources to them. The executives of the operating groups are responsible for the success of their respective divisions in the market place.

Professor Chandler selected the four companies—Du Pont, General Motors, Jersey Standard, and Sears Roebuck—because they were among the first industries to initiate major reorganization and because information (corporate records, correspondence, memoranda, and, notably, interviews with the principal executives) about them was readily available. What results is almost a day-by-day account of how each of the four companies evolved its particular administrative structure. (One minor criticism: Some of the daily happenings might have been more stringently edited. The art of good summarization still has a place in modern scholarship.)

Regardless of the state of scientific management, business is still an art depending to a great extent upon individuals. Professor Chandler underlines this point by showing in his case studies where failure by senior executives (Coleman du Pont, '84, William Durant, Richard Sears, Walter Teagle, and Robert Wood) to appreciate administrative needs of their organizations was a prime causal factor either in not initiating or in delaying administrative reorganization.

On the other hand, "engineering training, a rational, analytical approach to the problems of management, comparative youth, and a relatively short incumbency

in any one position, all helped business executives to appreciate the new needs and to become organizational innovators" as demonstrated by Pierre du Pont, '90, Harry Haskell, Donaldson Brown, Alfred P. Sloan, Jr., '95, Frank Howard, Edgar Clark, James Barker, '07, and Theodore Houser.

An ancillary point scored by Professor Chandler is that the health of a business enterprise depends less on the creation of a central staff office than upon clarification of the duties of senior executives and encouragement to concentrate on entrepreneurial rather than operational activities.

Professor Chandler concludes his work with a brief survey of the administrative history of a long list of America's largest industrial enterprises indicating to what extent they followed the pioneers of modern management. Here one feels that the author is at his weakest: Slight evidence is cited about changes in administrative structure of the companies surveyed. Yet, only minute scrutiny of a company's internal business documents can accurately reveal details of administrative hierarchy and operational methods, and this he frankly admits wasn't done.

Professor Chandler is to be highly commended for valuable additions to our knowledge of the history of American business. Here is a work to be read not only by scholars, but by businessmen and even public officials. He has pointed the way for further research, notably in the importance of the market in determining the growth and administration of America's economic resources.



## Sloan Fellows

# YOUR FRIENDS

We have many changes of assignment—some just announced and others received since the printing of a Directory Supplement: Boeing Company announced the appointment of **Thornton A. Wilson, '53**, as vice-president—manager, Minuteman Branch, ASD. . . . **John C. Davis, '56**, has moved from California to the Chicago headquarters of the Atchison, Topeka and Santa Fe Railway Company as assistant to the president for staff studies. . . . As of August 1, **William C. Mercer, '56**, became vice-president, operations, for Indiana Bell Telephone Company. . . . **Lincoln A. Divoll, '59**, is now Boston area sales manager for New England Telephone and Telegraph Company. . . . **Edward R. Kinsley, '59**, has returned to Canada as executive vice-president, Electric Reduction Company of Canada, Ltd. . . . **John A. Wagner Jr., '60**, is now vice-president, Wagner Castings Company. . . . **Keith B. Bennett, '61**, Burroughs Corporation, is traveling extensively as program director for a defense system.

Two new 1962 Sloan Fellow assignments are: **Peter F. Mueller** as assistant to the controller, Ciba Corporation, Summit, N.J.; and **Glendon E. Rose**, General Manager, Aerojet Commercial Products Facility—a recently established new company (still under Aerojet's wing) set up to handle product engineering, sales and manufacturing of products for the commercial market, and dealing with the Aerojet Model AD 120 microwelder. . . . This year the Sloan Fellows made their industrial study trip to the Philadelphia area where we were very warmly received by the officers of Campbell Soup, RCA, Socony, and Sun Oil. We spent three and-a-half very full and pleasant days there, starting with a dinner on Sunday night, September 9, with the Sloan Alumni in that area. Principal speakers of the evening were Dean Howard W. Johnson, and **E. Glenn Soash, '36**, Manager, Investment Section, Industrial and Biochemicals Department, E. I. du Pont de Nemours and Company.

Several promotions, elections, and appointments were received recently among graduates of the M.I.T. Program for Senior Executives. **Cuthbert C. Hurd**, Spring, '59, has been named chairman of the board, Computer Usage Company. . . . **John H. K. Shannahan**, Spring, '59, is now assistant to the president, Kansas Power and Light Company. . . . **Robert R. White**, Fall, '60, is a member, Management Services, Arthur D. Little. . . . **Frank J. Bednarz**, Fall, '61, is now director of engineering for the Research and Engineering branch of Lockheed Missiles and Space. . . . **John Wohnlich**, Fall, '61, is general sales manager, Aluminum Industrie-Aktien-Gesellschaft.—**Peter P. Gil**, Secretary, Room 52-455, M.I.T., Cambridge 39, Mass.



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# Club News

## Professor Mann Addresses Group in New Hampshire

Robert W. Mann, '50, Associate Professor of Mechanical Engineering at M.I.T., explained and showed slides of the work done by the Engineering Projects Laboratory, of which he is chairman, to the M.I.T. Club of New Hampshire on November 5. Frederick G. Lehmann, '51, Secretary of the Alumni Association, gave a short talk on the work of the Association. Glenn D. Jackson, Jr., '27, Club President, presided at the dinner meeting attended by 60 members and guests at the Nashua Country Club.

Newly elected officers are M. Arnold Wight, Jr., '40, of Amherst, President; Edward A. Beaupre, '41, of Nashua, Vice-president; Lawrence C. Hall, '35, of Amherst, Alumni Council Representative; and Blaylock Atherton, '24, of Nashua, Secretary-Treasurer. Charles R. Prichard, Jr., '30, Past President, was chairman of the Nominating Committee.

In addition to those named above, the following members were present: Philip N. Cristal, '17; Harold E. Langley, '19; Julian Lovejoy, '22; Jason T. Bickford, '23; Howard F. Russell, '23; George E. Apel, '26; E. Sterling Pratt, '26; Roger R. Smith, '26; Charles R. Green, '29; John P. Rich, '29; Elmer R. Burling, '30; Mrs. Thomas J. Clough, '32; Clarence W. Farr, '33; Francis J. Safford, '34; Leon W. LaBombard, '41; Morton E. Goulder, '42; Maynard S. Renner, '42; Sidney L. Hall, '43; Sing Leong, '45; William H. Shuman, Jr., '45; Philip G. Labonbarde, '47; Davis P. Thurber, '48; John P. Whittemore, '48; Harold E. Keene, Jr., '49; Edward J. Lanpher, '49; Dwight E. Brown, '51; Richard J. DeCloux, '53; Renaldo A. Rivero, '54; Harold E. Langley, Jr., '55; Robert H. Soli, '58; and Martin Trust, '58.—Blaylock Atherton, '24, Secretary-Treasurer, 142 Main Street, Nashua, N. H.

## Delaware Valley Club Visits Valley Forge

The M.I.T. Club of Delaware Valley toured the vast new complex of buildings at Valley Forge which house the General Electric Company's Space Technology Center last October 23.

Before the tour, 163 members and guests dined at a nearby restaurant and heard Dr. Leo Steg of the Center speak on "Space Exploration—Ways and Means." His illustrated talk on projects to get men into space made the subsequent tour much more meaningful. From the comments heard after the meeting, everyone was impressed with the equipment and effort required to get equipment into space and have it function properly.

The next meeting will be January 29 at the Barclay Hotel, Philadelphia.—Thomas V. Griffiths, '57, Secretary, Spring Valley Drive, Media 27, Pa.

## Future M.I.T. Club Meetings

Following are the dates and principal speakers as announced at the time of printing for M.I.T. club meetings during January and February, 1963. For more details consult the club secretary in your city.

### January 10, 1963—Boston—Hugh S. Ferguson, '23

Secretary: Warren W. Heimbach, '58, Scientific Development Company

### January 21, 1963—Pittsburgh—Professor Roland B. Greeley

Secretary: James B. Allen, '36, Pittsburgh Chemical Company

### January 24, 1963—New York—Silver Stein Dinner

Reservations: M.I.T. Club of New York, Biltmore Hotel

### February (first week)—Route 128—Professor Roy Lamson

Secretary: Robert E. Anslow, '54, Raytheon Company, Lexington

### February 14, 1963—Boston—Dr. Peter T. Demos, '51

Secretary: Warren W. Heimbach, '58, Scientific Development Company

### February 21, 1963—Rochester—H. B. Kane, '24

Secretary: John D. O'Brien, '51, Eastman Kodak Company

*Additions to this column of meeting announcements are welcome. Copy is due January 24 for the March issue of The Technology Review and should list your club meetings for March and April. Send your copy to: Alumni Secretary, M.I.T. Alumni Association, Room 1-280, Cambridge 39, Mass.*

## Rhode Island Alumni Hear Professor Dietz

The M.I.T. Club of Rhode Island held its fall meeting on November 8 at the Brown University Faculty Club. William H. Barker, '32, Club President, especially enjoyed introducing his classmate, Albert G. H. Dietz, '32, Professor of Building Engineering at M.I.T., who explained new trends in building construction.

H. Bruce Leslie, '38, and William L. Ahlborg, '51, were co-chairmen of the committee that arranged the meeting.

Royal Sterling, '23, was appointed chairman of the next meeting. He has proposed a luncheon meeting. This is something new for the Rhode Island Club, and should help our efforts to broaden the active membership of the club.—S. Martin Billett, '48, 16 Greenwood Avenue, Barrington, R.I.

## Boeing Laboratory Host To Puget Sound Club

The fall meeting of the M.I.T. Club of Puget Sound was held on September 14 at the Boeing Scientific Research Laboratory in Seattle. The guest speaker was Lawrence J. Heidt, Associate Professor of Chemistry at M.I.T., who described his work in solar energy and discussed some of the interesting and entertaining applications—from solar heating in Massachusetts to solar cooking in the Far East.

Arnold Gagnes, '46, Club President, announced the resignation of Edward W. Kimbark, '33, Vice-president, to take up full time duties with the Bonneville Power Administration in Portland, Ore. Andrew T. Hengesteg, '55, will fill out his term.

A January dinner meeting of the club is planned.—William J. Sullivan, Jr., '51, 646 S. W. 145th Street, Seattle 66, Wash.

## Southern California Club Hears Patent Attorney

Lewis E. Lyon, '23, a graduate of Course X before taking his law degree at the University of Southern California, spoke to the M.I.T. club of Southern California on November 14 at the Nikkabob Restaurant in Los Angeles.

Lyon, who is now a patent attorney in Los Angeles, explained the contract right of employees and employers concerning confidential information and the subsequent employment and development of products which are outside the normal business activity of the employer.

New officers will be elected at an annual meeting on January 15.—Arthur Schwartz, '47, Assistant Secretary, 8355 Blackburn Avenue, Los Angeles 48, Calif.

## County Executives To Meet With Long Island Alumni

The M.I.T. Alumni of Long Island will hold a dinner meeting on Friday evening, January 18, at the Patricia Murphy Restaurant in Manhasset. H. Lee Dennison and Eugene H. Nickerson, County Executives at Suffolk and Nassau respectively, will address the group. Event Chairmen are William B. Terry, Jr., '43, and John T. Sherman, '31.

Also scheduled is a May 17 dinner meeting under the direction of Event Chairmen Myron A. Cantor, '39, and Duane Yorke, '54. Kurt Stehling of NASA, guest speaker, will explain NASA's future plans. A cocktail hour before dinner will be sponsored by Republic Aviation and Kollsman Instrument Corporation. For additional information on these events, contact Myron Cantor, President, WA2-6057.—Jimmie Chin, Secretary, 67-15 152nd Street, Flushing 67, N. Y.

## Fairfield County Club Elects 1963-1964 Officers

Clinton H. Springer, '45, was elected president of the M.I.T. Club of Fairfield County for 1963-1964 at a meeting on October 24 at the Clam Box in Westport. Also elected were Arthur J. Weinberger, '41, Vice-president; George A. Bradley, '52, Corresponding Secretary; Leonard F. Glancy, '44, Review Secretary; and C. Philip Epifano, '39, Treasurer.

Columbus O. Iselin, Professor of Oceanography at M.I.T. and Harvard, discussed "The Future of Oceanography." Iselin compared the American fishing industry with that of foreign countries. There is no danger of man's requirements depleting the supply of fish, he pointed out, and the productivity of a body of water can be greatly increased through proper management. At present, Iselin said, the lack of international agreements hinders the application of these techniques to small areas. He described some of the oceanographic accomplishments of the IGY as an example of advances which can be made through the co-operation of a number of nations.

Professor Iselin was the first captain of the research ship "Atlantis," is a Bigelow Oceanographer at Woods Hole Oceanographic Institute, and serves on the National Academy of Sciences Committee on Underwater Warfare.—Randall Goff, '51, Review Secretary, Goodhill Road, Weston, Conn.

## New Mexico Group Notes Alumni Promotions

Julian (Chuck) E. Gross, '50, was recently promoted to supervisor, Advanced Electronics Systems Division, and Carl A. Anderson, Jr., '61, was advanced to supervisor, Sandia Engineering Research Facility—both of Sandia Corporation.

During the last weekend of September, Frederic (Ted) C. Alexander, Jr., '32, and his son, Robert, were in a party of four which hunted antelope in the Shirley Basin country, north of Medicine Bow, Wyo.—and each brought home his trophy!—Thomas J. Raftery, '31, Secretary, 1505 Valencia Drive, N.E., Albuquerque, N.M.

## Detroit Club Learns About Water System

Detroit's M.I.T. Club got off to a "bubbling" start this year with a visit to the Northeast Water Pumping Station of the City of Detroit. Detroit is fortunate in having a practically unlimited supply of water from the Great Lakes. More than one billion gallons a day are pumped from the Detroit River through the main station where it is screened, pre-chlorinated, and diverted through tunnels to two other locations—one of which is the Northeast Station. There it is lifted over 84 feet to the surface where it is settled, filtered and post-chlorinated. Pressure on the lines to the consumers is maintained through varying demand periods by using a reservoir and varying the number and size of pumps utilized. While we were there, for instance, they were preparing for the "TV Drop" in water pressure which occurs every night when people turn off their TV sets and prepare for bed. The evening was educational, fun and good exercise.

The Club met for cocktails and dinner at Gino's Steak House before the waterworks tour. Among those enjoying the steak dinner were Alumni of 25 classes from Charles L. Tuller, '12, to Michael H. Kaericher, '62, and including: Thomas J. Lough, '13; Dean H. Parker, '17; Charles H. Burnham, '22; Charles S. Comey, '22; Everett V. Martin, '24; Franklin Fricker, '25; R. Gordon Spear, '26; Morgan A. Collins, Jr., '27; Joseph S. Yates, '27; Harvey W. Chapman, '30; John D. Rumsey, '33; Jerry J. Costello, '34; R. Donald Purcell, '35; H. Clay Bagley, '39; Ernest W. Upton, '43; Dr. John F. Fennessey, '47; J. Edward Schwartz, '52; Julian M. Greenebaum, '53; James W. Mast, '53; Robert S. Elvidge, '55; John C. Erickson, '55; Richard R. Gardner, '55; Marc G. Forest, '56; H. R. Fortgang, '57; James C. Keith, '57; and Edward J. Amrein, '59.

Detroit Alumni should keep these evenings—January 25, March 7, and May 23—open for future Club meetings. The last will include a tour of Stroh's Brewery!—Ella Paton Gardner (Mrs. R. R. Gardner), '55, Secretary, 1821 Villa, Birmingham, Mich.

## Atlanta Alumni Host To High School Visitor

Bradbury Seasholes, Assistant Professor of Political Science at M.I.T., recently visited the Atlanta region to discuss M.I.T. with high school student groups. He was a guest at an Atlanta Alumni Association dinner on November 14 at the Captain Benbow Restaurant and was introduced by Fred N. Dickerman, '33.

Other Alumni at the dinner meeting were William E. Huger, '22, partner, Courts and Company, a financial house; Earl E. Blount, '28, Development Engineer, Preliminary Design, Lockheed-Georgia Company; M. E. Richardson, '34, Sturdi-Bilt Division Regional Sales, Union Asbestos & Rubber Company; William F. Spreen, Jr., '34, President, Bill Spreen Inc.; W. T. Shuler, '38, Chief Structural Engineer, Lockheed-Georgia; Albert P. Hildebrandt, '44, President, Kingsberry Homes, Inc.; Harry M. Walton, Jr., '49, Southeast Sales Manager, Metals Division, Olin Mathieson Chemical Corporation; and William Rigney, Jr., '53, a Research Engineer.

A few personal notes: Bill Spreen's company is busy selling and (infrequently, of course) servicing Volkswagens; Carl Blount is in the midst of building a reinforced Stone Mountain granite and concrete house, which he maintains will be even "kid-proof;" M. E. Richardson is active in power boating circles and is also in the Coast Guard Auxiliary; Albert Hildebrandt has just started a new Kingsberry Home development; and Harry Walton is trying to change the political system in Georgia to a two-party one, as a result of his recent marriage to the former Betty Jean Lewis, Richard Nixon's former secretary.—William T. Shuler, '38, Secretary, 4423 Mt. Paran Parkway, N. W., Atlanta, Ga.

## Professors Heidt, Iwasawa Guests of Japan Alumni

Lawrence J. Heidt, Professor of Chemistry, and Kenkichi Iwasawa, Professor of Mathematics, were honored November 20 at a meeting of the M.I.T. Association of Japan at the Japan Industry Club, Tokyo.

Upon Professor Heidt's arrival in Tokyo, Shikao Ikehara, '28, greeted him at his hotel and showed him part of the city. We shall try to help him discover typical Japanese theatres.—Shikao Ikehara, '28, President, Tokyo Institute of Technology, Oh-Okayama, Meguro-Ku; Yukio Hori, '57, Secretary, 584 2-Chome, Kugayama, Suginami-Ku, Tokyo, Japan.

## Schenectady Club Chooses New Officers

Wilford R. Oney, '48, was recently elected president for 1962-1963 of the M.I.T. Club of Schenectady. Other officers are William A. Folsom, '48, Vice-president; Jack Keverian, '50, Secretary; and Dennis E. Dougherty, '56, Treasurer.

David D. Adams, '50, Chairman, Richard L. Mathews, '50, and Robert E. Wilson, '45, served on the nominating committee.—Stuart B. Dunham, '42, Secretary, 2509 McGovern Drive, Schenectady 9, N.Y.



Samuel A. Goldblith (center), Professor of Food Science, met Luciano A. Preloran (left), '22, and Roberto J. Ottonello, '22, last fall while visiting Buenos Aires as a member of the U.S.-Argentina Joint Commission on Foot and Mouth Disease.



# Class News

'95

Thanks to The Review for sending to us this news cutting from the Plainfield Courier News, August 27, 1962: "**Fred-erick W. Harris**, 89, of 17 Highland Place, Great Neck, L.I., formerly of Plainfield, died yesterday (August 26, 1962) in the Huntington (L.I.) Hospital. He had retired in 1942 as a civil engineer for the City of New York, after 30 years service. He moved to Great Neck a year ago from Florida and was a member of Grove Street Chapel in North Plainfield. Mr. Harris leaves his widow, Mrs. Sarah Gertrude Allen Harris; two sons, Edwin A. Harris of Mt. Kisco, N.Y., and F. Donald Harris of Mexico City; two daughters, Mrs. Carroll D. Wills of 253 North Drive, North Plainfield, and Mrs. Wardell Ayrault of Great Neck; 12 grandchildren and one great-grandchild. Services were held in the Memorial Funeral Home and interment was in Cloverleaf Memorial Park, Woodbridge."—**Andrew D. Fuller**, Assistant Secretary, 120 Tremont Street, Boston, Mass.

'96

Here is an excerpt from a newspaper article entitled "Brighton Firm Ahead in Laser Products": "Scientific people, when they talk about the extraordinary properties of the laser (an acronym for 'light amplification by stimulated emission of radiation'), stress the term 'coherence.'" Dr. Charles H. Townes, when he lectured on masers at the September conference at Tech, flashed a small bright light on the screen. He later gave the same lecture at a luncheon of the M.I.T. Club of Boston. Since these two properties of electronics have become so important, your secretary decided to learn something about them, so I phoned **Robert A. Davis**, VI, for information. I learned that he is pretty well, still drives his auto in the daylight; and that the reason I missed him in Yarmouth was that he came home to Waltham in the middle of September. He met a chap named **Sanderson** recently to whom he said: "It must have been your father who was in my class at Tech." The response was "No, that was my grandfather." Bob said he refers questions in electronics to the husband of his niece these days. He has given up his golf club membership to make room for the juniors—the same reason I have quit the Plymouth Yacht Club. . . . I met **Henry Hedge**; he retains his membership even though he has given away his motor boat and his duck. There are only half a dozen ducks left. Miss **Ada Mary Fitts** died November

14; she taught for many years in the Boston public schools. Besides her study in Course VII, she spent several years in settlement house work in Boston and Chicago and traveled abroad several times. She was qualified to direct special classes for 25 of her 95 years.—**James M. Driscoll**, Secretary, 129 Walnut Street, Brookline, Mass.; **Henry R. Hedge**, Assistant Secretary, 105 Rockwood Street, Brookline, Mass.

'97

Being more or less on crutches is not conducive to writing news, I find, but here are a few lines to keep the class informed. . . . Several good letters have come in; the first on which I report is from **Will Binley** who "reunited" all by himself for '97 last June: "Early in June I called on **Jere Daniell** at his home in Franklin, N.H. I was in hopes he could get down to Cambridge on Alumni Day, but he did not feel well enough at that time to do so, as he had just returned from the hospital. I found myself to be the only '97 member present at the luncheon on Alumni Day. In the morning I took the tour by bus to see the new buildings being erected, and I was very much impressed to see the amount and variety of the new projects. It seems to me that it would have been wiser to move M.I.T. out into the country where chances for expansion would be more favorable. There is a cry for more space all the time now, and I find there is a feeling of being crowded. The M.I.T. that we knew and the present M.I.T. are so different that I feel like an outsider without much contact with present realities.

"At the luncheon I sat between some men of '98 and a few old timers of the classes of '91—'96. We are certainly near the end of the line. I was somewhat staggered to learn of the amount of gifts in money received by the Institute from various sources and classes. It shows the intense interest in M.I.T. at present by both Alumni and business firms and friends. . . . I did not feel up to staying all day to take in the evening banquet, but left that up to those younger. I did not see **Charlie Currier**, so did not call

up **Walter Humphrey**. I regret that '97 was not better represented, but I trust a more favorable report can be made on the next occasion. Thanks for the suggestion that I drop by Hastings to say 'Hello' when on the way south. It certainly will be kept in mind. I trust you both had a pleasant vacation a East Bay Lodge."

Two other good letters came from **Frederick C. Gilbert**, '98, at Hemet, Calif., and from **Ed Hawkins** at Hingham. I will reserve them for another month. . . . Lacking an official class secretary, the disposition of Class Records that **Jack Ilsley** kept so carefully is a question raised by Mrs. Ilsley. Unless I hear of a voluntary secretary-treasurer I shall ask Mrs. Ilsley to forward them to the Alumni Association with the expenses paid from the class fund which is, I think, about \$200.—**George R. Wadleigh**, Acting Secretary, 70 Flower Avenue, Hastings-on-Hudson, N.Y.

'98

Once again it's Happy New Year! How many remember our Class Yell? Ninety eight- ninety eight-rah rah—rah rah; Ninety eight- ninety eight-rah rah—rah rah; Hoo rah—hoo rah M.I.T. ninety eight—rah rah rah. . . . Also while reminiscing, let's bring up the subject of our drills. All freshmen were required to drill under Instructor Captain John Bigelow, Jr., of the U.S. Army and will recall the freshmen competitive drill of May, 1895, in the South Armory on Irvington Street. Company C of the four '98 companies, took first prize in that competition and so was qualified to compete later with Harvard—this competition was also won by Company C. The company picture, taken outside the Armory, shows 46 men. Of this group, eight are still living including Professor Joe Riley, First Lieutenant, and Howard Collins, Second Sergeant. The six privates are LeRoy Byam, Everett Curtis, Carl High, Arthur Huse, Fred Jones and Ernest Woelfel.

**Dave Fenner** writes that while attending the annual meeting of the Cape Cod Yale Club on June 1, 1962, at the Wianno Club, he presented the manager

## Deceased

FREDERICK W. HARRIS, '95, Aug. 26\*  
MISS ADA M. FITTS, '96, Nov. 14\*  
GEORGE L. SMITH, '98, Sept. 6\*  
SHELDON D. GRAFF, '00, Nov. 12, 1961\*  
LEIGH S. KEITH, '00\*  
EDWARD SEAVER, '01, Nov. 5\*  
CASPAR A. SCHMIDT, '03, June 26  
IRVING E. ADAMS, '04, May\*  
ALBERT J. BARNES, '09, Nov. 2, 1961\*  
CAREY A. WALBRIDGE, '09, March 3, 1961  
ROBERT W. WILLIAMSON, '09, May 19, 1961\*  
FREDERICK C. LOWETH, '12, Aug. 11\*  
C. HAROLD HOPKINS, '13, June 16\*  
CLARENCE S. ROE, '13, April 16\*  
RANDOLPH H. MAYER, '14, March 1  
THEODORE F. SPEAR, '15, Oct. 14\*  
CLARENCE G. HOLT, '17, Oct. 10\*  
HOWARD R. STEWART, '17, Sept. 26\*

HARRY S. TOOLE, '17, Sept. 24\*  
E. KENNETH CLARK, '20\*  
DANIEL E. MCCARTHY, '21, Aug.\*  
HUGH E. MCKINSTRY, '21, June, 1961\*  
ARAM BASHIAN, '22, Sept. 9\*  
HARRY E. JONES, '22, April 8  
CHARLES S. SMITH, '22, Sept. 16\*  
BEVERLY M. BROWN, '23, Aug. 9  
EGER V. MURPHREE, '23, Oct. 29\*  
JOSEPH M. NAUGHTON, '24, Oct. 1\*  
ELLIOTT E. McDOWELL, '25, Oct. 2  
JOHN E. LINEBAUGH, '28, Feb. 24\*  
ROBERT M. SPRAGUE, '31, March 6\*  
EUGENE D. MCANALLY, '34, April 19  
EDWARD H. NOWELL, '34, Nov. 2\*  
WILLIAM R. TOMLINSON, Jr., '34 Sept.\*  
MILTON SILVERMAN, '36, Feb.\*  
WALTER M. ENNIS, Jr., '41, June  
WILLIAM B. BROOKS, '43

\* Further information in Class News.

of the Club (a Yale man) the 49-year-old plaque which commemorates '98's 15th reunion held in 1913 at the Wianno Hotel. Dave who, as we know, is also a graduate of Yale, got a big laugh, he says, while relating to the manager some of the incidents of that famous reunion.

Our classmate, Professor **Joe Riley**, had the pleasure in May, 1962, of a visit at his home in Needham from Ed Weissbach, '16, one of Joe's former students. Ed is now rector of Christ Episcopal Church in Somerville, Mass. Joe as we know, was at that time professor of mechanical engineering, specializing in engine design. Ed called this course "one of the best." He said that Professor Riley was extremely good in a small group where it was his custom to have students just gather around a drawing table and talk. They both regretted that M.I.T. has disposed of all the old steam engines they were required to operate in that course. Some of them are now in a museum in St. Louis. He found Professor Riley looking practically the same as when he last saw him (1916) and just as alert and keen as ever. Joe was always interested in photography, and he related to Ed that one of his hobbies was taking photos from the air by means of a kite.

We regret the passing of our classmate **George L. Smith**, 88, of East Norwalk, Conn., on September 6, 1962. We quote in part from an item in the Boston Traveler of September 8: "He was a graduate of Harvard, Class of '95 and studied architecture at M.I.T. He was associated with W. Peabody and Stearns in Boston and opened his own office in 1904. During World War I, he was associated with Stone and Webster in charge of the architectural treatment of the Boston Army Base. He leaves two daughters, Miss Theodora Eliot Smith of Baltimore and Mrs. James Kinnear Gussow of Norwalk, Conn., and a brother, Edgar Lawrence Smith of Drexel Hill, Pa." The Class extends its sympathy to the family.—**Fred-**

**eric A. Jones**, Assistant Secretary, 286 Chestnut Hill Avenue, Brighton 35, Mass.; **Edward S. Chapin**, Secretary, 271 Dartmouth Street, Boston 16, Mass.

'99

In the November Review, we reported the passing of our classmate **Samuel B. Robertson**. You can imagine then how glad we were to hear of our error and to know that Sam is very much alive. A note to the Institute on his behalf put the Alumni Office and Review Office on to the error. It seems that I received a change of address slip for Sam and mistook it for a notice of death. We offer up our sincere apologies and wish Sam a long life and best wishes from the class.—**Percy W. Witherell**, Secretary, 1162 West Street, Wrentham, Mass.

'00

**Leigh S. Keith**, VI, died some time in the summer of 1962. For some years after graduation he was with the New York Telephone Company as engineer in charge of Central Station installation and special assistant to the chief engineer. During this period he made extended studies of the comparative merits of automatic and manual telephone systems. In 1909 he joined the firm of MacMeen and Miller, Consulting Engineers, in Chicago and ultimately became managing engineer and partner. Shortly after the entry of the United States into World War I, he joined the service as a major in the Statistics Branch of the General Staff. This was in 1918. The following year he was transferred to the Purchase, Storage and Traffic Division of the General Staff and Statistician of the War Department. He was made a lieutenant colonel in 1919. After the war he was associated for two years with J. G. Wray and Company as special engineer. In 1922 he opened his own office in Chicago as consultant on public utility and industrial matters. He was also made vice-president and director of the Cook Electric Company of Chicago. When the Illinois state organization of the CWA was formed, Leigh joined the staff of **Frank D. Chase** who was the administrator; Leigh was with that organization and later the Work and Rehabilitation division of the IERC until September 1935, when he became secretary of the Western Society of Engineers. He had previously been treasurer and later vice-president of that society. In 1947 he retired to a quiet life in his home at Villa Park, Ill., and we have heard little from him since that time.

We have only recently received word of the death on November 12, 1961, of **Sheldon D. Graff**. We have not as yet been able to get much information regarding his professional activities. During the First World War he entered the service in 1918 as a captain in the Field Service, Supply Division, Ordnance Dept. In 1919 he became a major in the Purchase,

Storage and Traffic Division, General Staff. After the war he became a research engineer for the Dennison Manufacturing Company of Framingham and apparently remained with that company until his retirement a few years ago. He had resided for many years in Wellesley.—**Elbert G. Allen**, Secretary, 11 Richfield Road, West Newton 65, Mass.

'01

It is with deep personal sorrow and a sense of great loss to the class that I have to report the death of one of our most prominent classmates, **Ed Seaver**. He died at his home in Duxbury on November 5. He was 83. He was born in Roxbury and lived in Needham for 30 years before moving to Duxbury. He was chairman of the Needham school committee and founder and former president of the Needham Taxpayers Association. While employed by the Westinghouse Corporation in Pittsburgh he was co-designer of the first steam turbine. This turbine was installed in the "U.S.S. Collier Neptune." During World War I he was in charge of the Emergency Fleet Corporation, in Philadelphia, and from 1921 to 1946 he was New England manager of the power equipment division of the Foster-Wheeler Corporation. In Needham he was in charge of installing the town's first sewer system and was a member of the Dwight School building committee. He was a past master of Norfolk Lodge AF and AM. He leaves his wife Grace (Whitmore) and a son Russell W., both of Duxbury. The funeral services were private. The class extends sympathy to the family. . . . This will complete the notes for this month and there will be none in February as the annual class letter appears that month.—**Theodore H. Taft**, Secretary, Box 124, Jaffrey, N.H.

'02

At least two of our class have not withdrawn into the mothball stage of retirement. Post cards were received from **Carlton Allen** this last summer from Hawaii and from **John Marvin** from Brussels. A later letter from John tells more of his trip as follows: "Our cruise visited Iceland, Norway, Sweden, Russia, Germany, Denmark and Belgium. Iceland interested us on account of its early history and modern methods for heating cities from the natural hot springs. Norway with its North Cape, the land of the midnight sun, and the wonderfully beautiful fjords more than lived up to our expectations. Sweden the same, and in both countries the historic reminders of the Vikings were fascinating. I enjoyed seeing the two Viking ships recently excavated and restored at a museum in Stockholm. Russia was, of course, different from any other place. The magnificence of the old tsarist periods contrasted with the austerity of modern Communistic living. But there is less poverty than I had expected.

## Happy Birthday

We extend our congratulations to an Alumnus who is celebrating his 95th birthday in January and to 4 and 15 Alumni who are celebrating, respectively, their 85th and 80th birthdays this month, as listed below with dates of birth:

January, 1873—**LOUIS A. FREEDMAN**, '07, on the 1st.

January, 1878—**JOHN R. MARDICK**, '02, on the 1st; **DANIEL C. PICARD**, '03, on the 20th; **AVERY ROBINSON**, '99, on the 21st; and **LESTER F. MILLER**, '01, on the 24th.

January, 1883—**ARTHUR T. BALKAM**, '05, on the 3rd; **JOHN T. MAHAR**, '07, on the 9th; **EDGAR B. COOPER**, '05, on the 13th; **PERCY A. GOODALE**, '05, on the 15th; **CONVERSE SMITH**, '05, on the 16th; **DERICK S. HARTSHORN**, '09, **EDWARD A. MEAD**, '05, and **PHILIP B. STANLEY**, '06, on the 18th; **EUGENE H. RUSSELL, JR.**, '04, on the 20th; **GEORGE G. THOMAS**, '07, and **HAROLD E. YOUNG**, '06, on the 25th; **CHESTER A. HOEFER**, '06, on the 26th; and **GEORGE A. MORRISON**, '09 **JAMES L. WICK, JR.**, '06, and **ARTHUR L. SHERMAN**, '06, on the 29th.

"The greatest contrast however was between East and West Germany. We saw only a bit of East Germany from the tender that took us ashore at Travemünde. It was bare. Nothing in sight. We were told the shore was strung with high tension barbed wires and that sail boats venturing close were fired on. West Germany, both in the country and cities, was most prosperous with many well patronized amusement places. Copenhagen, Denmark, fascinated me more than any other place. Old places, inns and churches going back to Viking times and culture, contrasting with the modern gay, friendly gardens and amusement places, jolly folks and beautiful cities. Antwerp and Brussels are different from our modern cities but more like other European cities than the Scandinavian ones I visited. Brussels, however, intrigued the ladies who shopped for laces."

**Dan Patch** and **Lewis Moore** attended the Conference of Alumni Officers at M.I.T. in September and report it was very interesting. Early in November Dan ran another reunion of the Veterans of the Sixth Massachusetts Regiment of the U.S. Volunteer Infantry of the Spanish War. Only 14 members of the regiment of 1,340 in 1898 showed up. However 16 guests helped to eat the turkey. **Roger Greeley**, who could not be with us in June as he was hospitalized with an ailing foot, is reported back on the job and in pretty good shape. . . . The address of **William N. Brown** is now c/o Mr. Chester Kevitt, 75 Blanchard Road, South Weymouth, Mass.—**Burton G. Philbrick**, Secretary, 18 Ocean Avenue, Salem, Mass.

# '03

To stimulate the avid interest of our classmates in our almost unimaginable 60th Class Reunion, your secretary is eagerly awaiting your response. This epochal event in our long and successful careers as Alumni of M.I.T., should stir our mature enthusiasm to strive with positive effort to be present and enjoy the lasting memory of meeting again our former associates, each with his own highly interesting story to tell. . . . Our happy birthdays and congratulations go to our classmate and treasurer **Augustus H. Eustis, III**, on his 85th, October 5; and to **James S. Sheafe, II**, for his 80th on November 29. Jim's address is 450 Blackstone, La Grange, Ill.

A reminiscent note from the '03 Class Notes in the July, 1916, number reads: "the 'Big Time in the Old Town' is almost upon us and will be a thing of the past by the time you read these lines. Gleason, Foster, Robertson, Sears and **Ichabod Atwood** have been planning dark doings and are ready to greet the courageous few who have been able to give up new ties for old at the Bass Point House, Nahant, Mass., Saturday, June 10. More of you should be coming. You'll be sorry you didn't when you get the Review and find out what you missed. Here's hoping some of you change your mind between now and then.

"Two '03 men have been getting themselves talked about lately—newspaper talk too, that brings their deeds before the public at large. From the Providence, R.I., Journal—**Raymond M. Hood**, a New York architect, has drawn startling plans for improvement of Exchange Place. His plans would form a group of public buildings, including the Court House, City Hall, Customs House, at one end of a great open plaza and the State Capital and Normal School at the other. . . . The other guilty man is **Ernest W. Pelton** of New Britain, Conn., who has received the unanimous nomination of the Democrats for mayor.

"The reunion notices bore fruit in a letter from **Howard S. Morse, I**, from Cincinnati, Ohio, who has resigned as Director of the City Municipal Research Bureau for Department of Public Works, Detroit, Mich. This bureau is organized to conduct Municipal, State and Government Research."—**John J. A. Nolan**, Secretary, 13 Linden Avenue, Somerville, Mass.; **Augustus H. Eustis**, Treasurer, 131 State Street, Boston, Mass.

# '04

You will not be reading these notes until after the holidays so we can't wish you the usual season's greetings. However, we hope Santa Claus was good to you all and that the new year treats you well. . . . **Katherine McCormick** has made the headlines again. The National Observer of October shows the picture of a castle in Geneva, Switzerland, with well-landscaped grounds which she presented to the U.S. Government for housing official conference delegates. Once more we are proud of our generous classmate. . . . Your secretary and wife made a call on our invalid president **Currier Lang** at his home in Norwalk, Conn., in October. He was glad to see us but as stated in the November notes he is still badly handicapped by the paralytic stroke he suffered last January. . . . Some of you may recall that two years ago these notes recorded the opening of Camp Hayward for Girls under the auspices of the Quincy, Mass., Y.M.C.A. The camp at Sandwich, Mass., completed its second season very successfully. The only complaint was from those girls who were turned away for lack of cabin space. . . . Our Treasurer, **Eugene H. Russell, Jr.**, of Boston, will celebrate his 80th birthday on January 20. Congratulations to you, Eugene.

The latest report of the Alumni Fund indicates that '04 stands Number 2 in percentage of active members participating. This is the signal for a bow on the part of our class agent **Gus Bouscaren**. . . . **George Kaiser** and family made a brief call in Boston in October coming from Sharon, Pa., via San Francisco. . . . It sometimes happens that obituary notices do not reach us until long after the deaths have occurred. We report two such instances. The Alumni Office reports the death of **John S. Burrows**, Course III, at Baltimore, Md., on January 19, 1960, and of **Irving E. Adams**,

Course XII, at Olean, N.Y., in May, 1962.—**Carle R. Hayward**, Secretary, Room 35-304, M.I.T., Cambridge 39, Mass.; **Eugene H. Russell, Jr.**, Treasurer, 82 Devonshire Street, Boston, Mass.

# '05

As the days begin to shorten, so does news for The Review. In talking with some of my fellow secretaries, I find it's the same with them; some just have to keep fighting. I recently had to write a letter of thanks to a classmate, who signed his name to a check and told me he had a new post office box number. One thing I don't like to write is obituaries, so keep alive, please, and write me what you are doing to keep up the spirit of the "Golden Years." . . . Last month we had a visit from Ethel and **Prince Crowell**, who had driven up from Woods Hole and were touring the White Mountains (just a bit north of us). Both seemed well and hearty, but Prince sat on the edge of his chair, just itching to get back to salt water and his boats. They both admitted that they didn't attend so many square dances, but I'll bet they could do a few "dozey does" (or whatever those dance callers say) and without panting. Ethel told us about a delightful trip they had this summer to Swan Island (somewhere off the Honduras Coast), a perfectly marvelous place, to which they had been intrigued, because the original guano trade had been in ships from Woods Hole. Ethel later sent me her write-up of this trip. It was exciting. I am sure she would send you a copy (read and return) if you would like. Incidentally, Prince said he had a very successful year sailing and winning all the local yacht races.

**Charlie Smart, II**, has taken on some more side lines. Besides being the active chairman of the W. and L. E. Gurley Company of Troy, N. Y., he has been appointed to the Development Council for the School of Science at Rensselaer Polytechnic Institute. The council assists the institute faculty and administration in strengthening and extending educational programs, also assists in locating and securing financial support for these projects. He has also been appointed a member of the newly formed New York State Council of the National Council on Crime and Delinquency. He has served the Gurley firm since 1920, as superintendent, general manager, president and chairman of the board of directors. He was the first president of the Troy Industrial Club and has served as director of the Rensselaer County Heart Association and the Troy YMCA. Charlie adds that his book on the history of the development of surveying instruments will be published very soon. . . . The following quote from a letter from **Carlton E. Atwood, VI**, will seem a bit late, but it should not dull the fact that Carl is deadly serious in the analysis of handwriting. "Wish I could send along some encouraging news but, with me, everything centers around handwriting analysis. For this year, I was elected president



of the Massachusetts chapter of the International Grapho Analysis Society whose headquarters are located in Chicago. The Eastern Seaboard States have organized themselves into the Eastern Association of Handwriting Analysts and they are to have an annual convention in New York City, Henry Hudson Hotel, May 25, 26, 27, at which we expect from 300-400 to register for intensive study. It will be just that, judging from similar conventions in the past. If anybody else is interested in this subject, please communicate."

You have probably received **Bob McLean's** latest appeal for contributions to the Alumni Fund. Bob, like any successful fund drive chairman, is intensely interested in the showing of the class. He can look back with satisfaction as to the total class contribution, but would like a higher percentage of givers. If you have not contributed this year, please encourage Bob by sending in yours now. . . . Not as a filler, but because some may be interested I can announce my election as chairman of the Sandwich Home Industries (at least one Republican elected in N.H.). This is the corporate name of our arts and crafts society. It is the oldest arts and crafts society in New Hampshire and has the record of the largest shop sales per year. It's just one more (I already had three) job to keep me from being bored in retirement; incidentally, they are all a lot of fun. . . . I have these changes of address: **Edward T. Steel**, Apt. 2B, 38 South Sixth Avenue, La Grange, Ill.; **Theodore P. Moorehead**, Apt. 11, 279 Lee Street, Oakland, Calif.; **Huntington Smith**, 1332 Quail Drive, Sarasota, Fla.—**Fred W. Goldthwait**, Secretary and Treasurer, Center Sandwich, N. H.; **Gilbert S. Tower**, Assistant Secretary and Treasurer, 35 North Main Street, Cohasset, Mass.

'06

As I start these notes in the middle of November I look out on a winter wonderland! Not from a snowstorm as such but caused by cold upper air from Canada overriding moisture-laden air from the South. Just another kind of New England weather. And these are another kind of notes—Brief! . . . In the December notes I should have reported that **Sherm Chase** and I had attended the memorial service for **Tom Hinckley** at the First Church in Cambridge on September 26, when Tom's useful and successful life, his love of nature and mountain climbing, were so well reviewed. . . . In November Marion and I called to see President **Kidder** and his sister Mollie, who keeps everything shipshape. Jim uses a cane—at least he carries one around—and, of course, has some of those limitations most of us have to live with. In today's mail comes a long and welcome letter from **Bob Cushman** expressing his concern about Jim and me, recalling his own heart attack some 13 years ago, and since then enjoying his many hobbies. One of them is ships of all kinds and periods, and he expected

the December Review would contain an article on "Colonial Vessels" by W. A. Baker, XIII, '34 who master-minded the 'Mayflower.' Bob also referred to the devastating storm which hit that part of the West Coast early in October with winds up to 116 m.p.h. and causing around \$170 million damage. Bob and Ruth suffered some wind damage but they were fairly well covered by insurance.

Among **Terrell Bartlett's** memberships was the Torch Club, so when **Percy Tillson** received his October number of "The Torch" he spotted a paragraph about Terrell's book—"Who Wrote Shakespeare"—and under its column "In Memoriam" a report of his death and career. Thanks Percy. . . . During a recent telephone chat with Georgianna Hinckley she said she had received the torn out page from the November Review containing the class notes about Tom which had been sent to her by **Mrs. Thanish (Marion Hibbard)** whose daughter Kay has recently retired, I believe, after many years with the Harvard Service Bureau. Georgianna, by the way, was the librarian at Radcliffe College for 22 years. . . . We received a postcard recently from **Bob and Anne Rose**—who had enjoyed reading the "Brief History of Higher Education" in the November number—it is so satirical! The address of **John H. Cady, IV**, in Providence has for many years been the Hospital Trust Building but a new address has been reported, and I'm wondering if 127 Power Street means that John has retired or is it where he hangs his hat—will have to check.

Along in January another address change may come through to me as **Arthur Thomas, II**, has recently confided in Andy Fisher, '05, that "Beginning in January I expect to be teaching in Johnson City, Tenn., at a private school." Arthur's career was carried in the January, '61 class notes and he had lived in Johnson City in the late '50s. I can visualize Art sitting up nights marking exam papers! Will each of the winter visitors to the sunny South please send at least a postcard to—**Edward B. Rowe**, Secretary-Treasurer, 11 Cushing Road, Wellesley Hills 81, Mass.

'07

The regular fall dinner of the Class of 1907 was held at the Faculty Club on Thursday evening, November 1, 1962. Besides the usual Boston men, "**Chick**" **Eaton** came up from New Jersey and **W. Henry Martin**, from Mattapoisett. President **Don Robbins** had as his guest his grandson, Henry Robbins, who is taking advanced studies at M.I.T. Others present were Dick Ashenden, Seymour Egan, Tom Gould, Harry Moody, Bob Rand, and Phil Walker. . . . After the secretary had reported items of interest regarding various members of the class, a very interesting time was spent, as President Robbins showed colored slides of the trip he and Mrs. Robbins made last spring to Greece, Italy, Switzerland,

France, and England. Not only were the important places of interest shown, but many pictures that portrayed the people themselves and their mode of living.

There are several changes of address to note on your class list: **Emerson H. Packard, X**, now lives at 4 Oakland Street, Melrose 76, Mass.; **Gilbert Small and Company**, having done business at 10 State Street for 14 years, is now relocated at 10 High Street, Boston, Mass.; **Warren I. Keeler, V**, after spending a year in California has returned home to 104 Colman Street, New London, Conn. He very thoughtfully sent your treasurer a check for class dues. I wish more of our non-dues paying members would be as thoughtful. . . . "**Chick**" **Eaton, II**, will have as his winter address Craig, Fla., P. O. Box 516; Mrs. **James A. Beck**, (nee Isabel Worthington) a non-associate member, has moved to 8229 Portland Street South, Minneapolis, Minn., from Midland, Mich. . . . Several class members inquired about **Sam Marx's** move to New York City—the reason being to allow the grandparents to see more of their grandchildren, who all live in the New York area. Sam would also enjoy seeing any of his '07 classmates who wish to call on him.—**Philip B. Walker**, Secretary-Treasurer, 18 Summit Street, Whitinsville, Mass.; **Gardner S. Gould**, Assistant Secretary, 409 Highland Street, Newtonville, Mass.

'08

The first dinner-meeting of the class for the 1962-1963 season was held at the M.I.T. Faculty Club on November 7. Present were Bunny Ames, Bill Booth, Nick Carter, Paul Norton, and Joe Wattles. Our guests were Mesdames Ames, Norton and Wattles. The **Sewells** had expected to come, but bad colds prevented them. We assembled in the cocktail lounge and were able to capture a table for our party. While enjoying our favorite tonics and the fine crackers and cheese from the buffet, we swapped news of the summer activities and doings of absent classmates. About 6:45 P.M. we adjourned to private dining room number 4, where we enjoyed our choice of foods. After dinner, **Joe Wattles** showed Kodachromes taken at previous reunions, also views at Yucatan, Lucerne, etc.

Next June we celebrate our 55th. Our 55th Reunion will be held at the Melrose Inn, Harwichport, Mass., on the Cape, June 7-9, with headquarters at the Beach House, as in the past. Plan now to come and meet the old gang. This is the weekend before Alumni Day in Cambridge on June 10.—**H. Leston Carter**, Secretary, 14 Roslyn Road, Waban 68, Mass.; **Joseph W. Wattles, 3rd**, Treasurer, 26 Bulard Road, Weston 93, Mass.

'09

In the December Review we stated that plans for our 55th Reunion had already been started and that a local ad

hoc committee had begun investigating local hostelrys in the search for a suitable meeting place. In the meantime Molly has appointed the following 55th Reunion Committee: Molly Scharff, XI, ex officio; John Davis, II, Secretary; Chet Dawes, VI; Francis Loud, VI; Art Shaw, I; Henry Spencer, II; Harry Whitaker, VI. The membership is the same as that of the 50th Reunion committee with the addition of **Art Shaw**, who can contribute much. Five members were present at a luncheon meeting held at the M.I.T. Faculty Club on Friday, November 10. The dates of the reunion were set for Friday, Saturday, and Sunday, June 5, 6, and 7, 1964. (It is not as yet certain that Alumni Day will be held Monday.) From the limited number whom we have been able to interview the consensus is that a meeting place within a reasonably short distance from the Institute would be most desirable, since much driving time would be saved. We would be pleased to learn from other members of the class their reactions to this plan. The accommodations and rates of several local hotels and inns were studied and it was planned to visit some of them before making a selection. General plans for further procedures were also discussed informally.

We are pleased to report that on October 3 Art Shaw was honored by being made an honorary member of the New England Water Works Association. There are only 15 such members. . . . **Tom Desmond**, I, continues his efforts towards improving public health and living conditions of older people by two recent articles: "Older-Worker Laws: Good or Bad?" appearing in the October issue of "Today's Health," the magazine of the American Medical Association; and "Hospital by Day, Home by Night," appearing in the November issue of "The Rotarian." . . . On Alumni Day **Julius Serra**, I, advised the secretary that he would write to him describing some theories relating to the occurrence of nuclear products in gas wells, in which he had become intensely interested. As part of his background, while a student at the Institute, he took courses in geology and mineralogy given by Professors Richards and Jaggar. In recent years he has reviewed calculus and physics in evening courses at the University of Pennsylvania and more recently he has taken courses in nuclear physics and nuclear reactors at Drexel and the Engineers Club in Philadelphia. With all this as a background and with the aid of scientific papers, he has checked the occurrence of helium in natural gas wells, particularly in those where nitrogen predominates. He has theorized that if hydrogen and carbon were also present over a long period of geologic time, the formation of such nuclear products as deuterium and tritium might occur. He is continuing his studies and believes that if this project were pursued diligently by competent specialists, some striking information might be uncovered.

We have received a notice from the Alumni Office of the death of **Albert J. Barnes**, VI, at River John, Nova Scotia, on November 2, 1961. Our records show

little of his career since graduation except that he was employed as an engineer with the Bell Telephone Company of Canada at Montreal. He retired in 1955 and at the time we told in the Class Notes of his having gone to live at River John in northern Nova Scotia on the shore of Northumberland Strait just across from Prince Edward Island and of his walking along the shore and painting the surrounding scenery. He entered the Institute from Dalhousie University, was a member of the Mandolin Club and performed his thesis, "Induction Generator," with **Tom Spooner**, VI. This was an important thesis for it determined the use of induction generators in combination with the usual synchronous generators in a large power station of New York Edison. . . . We also received a notice of the death of **Robert W. Williamson** at Columbia, Tenn., May 19, 1961. In 1925 he was employed by the Alabama Power Company and then by the Gulf Power Company until 1940 when he joined the Columbia Power System in Columbia.—**Chester L. Dawes**, Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; **George E. Wallis**, Assistant Secretary: Wenham, Mass.; **Francis M. Loud**, Assistant Secretary, 351 Commercial Street, Weymouth 88, Mass.

## '10

I had the pleasure of having **Dallas Brown** drop in to the office recently on one of his infrequent trips to Boston. He has retired from his job as superintendent of New York City school construction, and is in good health except for minor infirmities of age. . . . **Arthur Curtis** was mentioned in the news recently. It appears Arthur has been in active business for the past 50 years. These 50 years have been a continuation of the Revere Ice and Fuel Company which he purchased from his uncle. . . . I understand that **Dudley Clapp**, who retired to Peterborough, N.H., has changed his residence from the open spaces to the village, where he is enjoying himself.

This morning I received a letter from **Carroll Benton** with the notice of the death of **Larry Hemmenway's** wife. Our sympathy goes to Larry in his sorrow. . . . Two weeks ago I made up my mind I was tired and was due for at least 10 days' rest. I went to Bermuda by ship. It was a rough trip but enjoyable. I stayed at Cambridge Beaches, a delightful place where I spent most of my time out in the sun, napping and reading. The time not spent resting was used for deep sea fishing, catching four small barracuda, and taking daily swims. I came back by plane and now feel rested.—**Herbert S. Cleverdon**, Secretary, 120 Tremont Street, Boston 8, Mass.

## '11

At our annual 7-come-11 dinner, at the M.I.T. Faculty Club, last November, there were 10 classmates present, all

from Massachusetts. They were **Obie Clark**, II, of North Weymouth; **Henry Dolliver**, I, of Belmont; **Jack Herlihy**, II, of Medford; **Charles Linehan**, I, of Belmont; **Roy MacPherson**, II, of Framingham; **Morris Omansky**, V, of Brookline; **Carl Richmond**, I, of Winchester; **Suren Stevens**, IV, of Belmont; **Oswald W. Stewart**, I, of Kingston, and **Emmons Whitcomb**, X, of Lexington—just short of our annual hopes for at least 11. After a customary fine dinner there were very interesting stories of past and present occupations and hobbies.

Class President **Howard Williams**, XI, wrote a nice letter from which I quote: "I regret very much that I shall not be in the East at that time and, consequently, cannot attend the dinner. Please extend my greetings and very best wishes to all in attendance. I don't think that I advised you that my home was completely destroyed, with everything in it, in the disastrous fire that destroyed over 450 homes just a year ago on November 6. Fortunately my wife and the two servants got out of the house a minute before it exploded as though a bomb had been dropped on it. Since that time we have been living in hotels and a rented home of some friends this summer. I have just purchased an apartment in the new Wilshire Terrace Building at 10375 Wilshire Boulevard, Los Angeles 24, Calif. We will try that for a period of time and see if we like it. In the meantime I am holding the five acres of land in the hills where my home stood, and we can always build there, if we decide to. Last spring we went abroad for about three months, traveling into Spain and France and working for several weeks in our Company in England. I still keep busy and am at my office each day before 8:00 A.M."

Cards were received from 14 other classmates who could not attend. They were **Joseph Aaron**, VI, of Brookline; **John Alter**, IV, of North Andover; **Ernest Batty**, II, of Milton; **Marshall Comstock**, VI, of West Medford; **Fred Daniels**, VI, of Worcester; **Cal Eldred**, VI, of Winchester; **Carl Ell**, XI, of Northeastern University; **Bill Fortune**, I, of Roslindale; **Albert Gardner**, II, of North Weymouth; **Tom Haines**, II, of Weston; **Maurice Lowenberg**, VI, of Brookline; **Ed Sisson**, I, of Brookline; **Gordon Wilkes**, II, of East Orleans; and **Walter Wilson**, X, of Andover. **Aaron** wrote that he has diabetes, and whenever he eats out he always eats something that he shouldn't. **Alter** and **Daniels** wrote that they don't drive after dark. **Haines** wrote: Why not have a lunch once in a while so that some of us old men could get together and not have to travel at night? . . . **Comstock** wrote that they expected to be visiting their children in Connecticut after the Dartmouth-Yale game November 3 in New Haven. . . . **Sisson** wrote: We have just had our eighth grandchild. Our oldest son, who is a surgeon in St. Louis, had three boys and now has a daughter. This makes six grandsons and two granddaughters. . . . **Eldred** wrote: "I will probably find becoming a great-grandfather exciting in the not too distant future." **Gardner**

wrote: "Am now on fifth year of retirement after 43 years with Bethlehem Steel Company, Quincy. Health good." . . . A letter from **Oswald W. Stewart**, I, was sent last November to all 1911'ers, with respect to the Alumni Fund, for which he is our class agent. Here's hoping that all of us will contribute.

The following quotation is from the September 22 issue of the *Lawrence, Mass., Morning Eagle-Tribune*: "Winner of a competition to design a seal for the occasion of the first 'For God and Country' parade 50 years ago was John F. Alter, widely known Lawrence architect. Half a century later the skill and creative ability of Mr. Alter have combined to produce a commemorative seal for the 1962 parade." . . . **Minot Dennett**, II, formerly of Detroit, Mich., now lives at 177 West Sunrise Avenue, Coral Gables, Fla. . . . **Roy Van Alstine**, I, moved from Myrtle Avenue to 100 Atlantic, Long Beach, Calif.—**Henry F. Dolliver**, Secretary, 10 Bellevue Road, Belmont 78, Mass.; **John A. Herlihy**, Assistant Secretary and Treasurer, 588 Riverside Avenue, Medford 55, Mass.

## '12

Since the announcement of **Phil Redfern's** death I have received the following information which is of interest. Phil was for many years with Mead-Morrison Company in Chicago and in 1929 went to Ravenna, Ohio, as sales manager for the Byers Machine Company. He served as executive vice-president and general manager as well as on the board of directors until his retirement in 1954. His wife Dorothy died while the couple were vacationing in Brazil, in 1952. He was well-known for his intense interest in music and was considered an impeccable critic and an authority on classical works. . . . **Frederick C. Loweth**, passed away on August 11 at his home in Shaker Heights, Ohio. . . . **Ricardo L. Pacheco** passed away last year in Costa Rica, where he had served as Minister of Public Works for many years. . . . *Dun's Review* for October, 1962, carries an article by **Albion R. Davis** on "Direct Costing." This has recently been a much-discussed subject in accounting circles but Albion feels that it does not present a true picture and is not considered good practice by the accounting profession.

**Jesse Hakes**, who sold his tool machine business five years ago, is happily living on a 250-acre farm near Baltimore. He rents the greater part of his acreage to a dairy farmer but has four tenant houses which he takes care of as well as a wholesale nursery that he manages personally. He and Mrs. Hakes enjoyed a world cruise on the 'Kungsholm' and the following year a cruise to the Far East and Pacific Islands on the same ship. Later they enjoyed a four-continent cruise on the 'Rotterdam.' With several Mediterranean and Caribbean cruises and a projected trip to the North Cape this year, they keep on the move. Jesse would be glad to see any of his old friends in Glenwood, Md. . . . **Buck**

**Freeman**, VI, writes from his home at 316 33rd Street, West Palm Beach, Fla., that illness prevented him and his wife from attending the 50th Reunion on the Cape. Buck has a son living on the West Coast and a married daughter living in San Antonio, Texas. The last two summers they have visited both children to get acquainted with their grandchildren. Most of Buck's working years were with the American Telephone and Telegraph Company in New York City and while there they lived on Long Island. They would be pleased indeed to see any of their old friends in Florida this winter.—**Frederick J. Shepard, Jr.**, Secretary, 31 Chestnut Street, Boston 8, Mass.; **John Noyes**, Assistant Secretary, 3326 Shore Crest Drive, Dallas 36, Texas.

## '13

Happy New Year. This is the most outstanding year for the Class of 1913, M.I.T. We have, at least, been out of the 'Stute for 50 years come June, 1963. Are you making plans to return to your alma mater for the Commencement and then celebrate your 50th Reunion at the Oyster Harbors Club and then back to Cambridge, this coming June? We expect over 100 persons present at our Class Dinner, including our classmates and their families. . . . **Jack Farwell** has promised that after he and Jeanne have visited France, Austria, Switzerland, also Italy, they will return to the States and be ready to contact all 1913ers in Connecticut. Thank you, Jack. . . . Several others of our class will be invited to contact classmates in various parts of our great United States and foreign climes. Can we count on you to assist your committee? . . . We have received a clipping from *The Los Angeles Times*, advising us that **C. Harold Hopkins**, engineer and sports enthusiast, died at the Santa Ana Hospital, Sunday, June 17. Hopkins was born in North Platte, Neb., but spent most of his life in Orange County, Calif., and was educated in the local schools, Occidental College, and M.I.T. In 1959, he was named to Occidental's honor list of alumni for career accomplishment; he also served on the college's board of trustees from 1935-39. Harold was an avid sportsman. He became a pilot after World War II and organized the Flying Farmers of California and the University Airport at Davis. As a fisherman, he held the world's record for striped marlin on lightweight tackle in New Zealand waters. As an engineer he assisted in the supervision of the building of the First Methodist Church and high school of Los Angeles. For 30 years, he was an adviser, consultant, and board member of the Hollywood Hospital. Harold Hopkins is survived by his widow, Louise Smith Hopkins; two sons: Charles of Peabody, Mass., and John; two daughters, Jean and Elizabeth; two sisters, Marie and Dr. Helen Louise; and six grandchildren. To C. Harold Hopkins, we bow our heads and mourn for our departed classmate.

Officially, the Second Century Fund was terminated last June. Now the

Alumni Fund is again on the move. You all have received the hearty appeals from both **Bill Mattson** and **Larry Hart**. What are you doing about it? Let's dig down and show the other classes that 1913 is still the "bestest." It was noted in the July 18 issue of *The Boston Herald* that Mr. and Mrs. **George A. Dempsey** announced the engagement of their daughter, Diane Elizabeth, to John Robert Schott of Swarthmore, Pa. Congratulations to the Dempsey family from 1913. . . . We have received a letter from J. Woodward Roe, whose father, **Clarence S. Roe**, passed away April 16, 1962, of natural causes. Roe was associated for several years with the Michigan State Highway Department after leaving school. During World War I, he was a captain in the Corps of Engineers. Following the war he was affiliated with the Ideal Power Lawn Mower Company, and soon became president of the firm, which position he held until his retirement in the early 1940s. Clarence was also active in many other business enterprises, in particular, the American Bank and Trust Company of which he was a director. He was a member of the board of trustees of the Edward W. Sparrow Hospital. Further, Roe was a Knight Templar and a 32nd degree Mason. To the family of Clarence Roe, we offer our sincere sympathy.

Once again, the M.I.T. Club of Mexico will hold its 15th Annual M.I.T. Fiesta in Mexico City, March 7-9, 1963. If any of you retirees or traveling or uneasy '13ers can partake in these festivities, we feel that you will be welcomed by many loyal Tech men. Write for particulars to Alvino Manzanilla, '31, Angel Urraza No. 1311, Mexico 12, D.F. . . . Larry Hart comments: "Will be seeing you again next June." . . . **Gordon Howie** notifies us of a change of address from Maine to 1421 South Betty Lane, Clearwater, Fla. "I heard you were up with **Lester Gustin**, bringing an important history up to date. I now have the history. Thank you. Will see you in June." . . . **Geoffrey Rollason** pens: "Phil; Dues enclosed herewith, Geoff." . . . **Fred Lane's** quote: "Here's my check for class dues. Eva and I are looking forward to the big days of our 50th Reunion next June. We pray that we may still be able to navigate under our own power at that time. Also, many thanks for the 1913 Class History which arrived several days ago. I've found it fascinating and have probably become altogether too nostalgic over it. But it has been fun going over some of the doings of 50 years ago. Good luck with plans for the reunion." **Vernon Kay** adds: "Check enclosed. Regards." **Burt Cushing** is newsy as always: "I am enclosing check for class dues. Mrs. C and I plan to attend the 50th next June. I am still teaching physics and mathematics at Fisher Junior College in Boston three days a week, just enough to keep me reasonably busy and happy; besides that I am chairman of the board of trustees at the Rockland Memorial Library and a deacon at the Congregational Church. Mrs. C and I called on the **Carlsons** at Norwell recently and had a very pleasant time. Best wishes to you and your good wife." . . . We are very happy to



report that Anne **Thompson** has returned from the hospital and is progressing slowly but surely.

Well! Until next month, then more notes and comments. When you receive or read these notes you can expect to be receiving shortly another reminder and questionnaire from the Reunion Committee. Return your tentative reservation for rooms at the Oyster Harbors Club, promptly. First come, first served. Lester Gustin has already made definite reservations for the entire reunion for himself and Ethel, also for Saturday night for his two sons and their wives. How about you?—**George Philip Capen**, Secretary and Treasurer, 60 Everett Street, Canton, Mass.

## '14

Happy New Year! And I am sure that our President **Charlie Fiske** feels that way too, since he has been able to arrange for our 50th Reunion. It is to be held on June 12, 1963, starting on the morning of Commencement Day when we will join the Faculty and watch the awarding of degrees to the current class. It will be a very different ceremony than the one we saw in old Huntington Hall. The exercises will take place at the Rockwell Cage on Massachusetts Avenue, directly across from the main Institute buildings. The special luncheon and other events will then follow back in the Great Court. Our own special meetings as well as our hotel facilities will be at the new Charter House Hotel on Memorial Drive, Cambridge, a very short taxi ride from the Institute. The hotel faces the Charles River basin and is situated directly across from an interesting section of Boston. This hotel is the first new tall hotel to be built in Boston in many years.

Charlie has also been able to arrange for **Ray Dinsmore** to accept the position of chairman for the 50th Year Reunion, which includes among its duties raising the size of the special 50-year gifts. **Herman Affel** will continue as our class agent, as he has done so well in past years. All sums from any source during the last 10 years will be credited to this 50-Year Fund.

A letter was received recently from **Rucker Bristow**, who is still active in Dunedin, Fla. Although he says that he retired from work 10 years ago, he has found that in retirement he now works 12-16 hours a day instead of the former 8-10. He is still active in the food technological field and finds a lot to do; in addition, he is one of the area representatives for the M.I.T. Educational Council and has sent several good students to the Institute. . . . A note has been received from our classmate, **Tatsuo Furuichi**, saying that he is now at home after a long session in the hospital in Tokyo, but still has to go back for frequent treatments. It may be recalled that Tatsuo has long been active in the Tokyo M.I.T. Club and is its former president. . . . **Randolph H. Mayer** of Shreveport, La., died on March 1. Mayer was only with our class for two years and has not been in

active contact with us in recent years.—**H. B. Richmond**, Secretary, 100 Memorial Drive, Cambridge 42, Mass.; **Charles P. Fiske**, President, Leamington Annex, St. Peters, Barbados, B.W.I.; **Herman A. Affel**, Assistant Secretary and Class Agent, RFD 2, Oakland, Maine.

## '15

What a Class! We can all be proud of 1915 and boast about it. Max's November 1 Alumni Fund letter was a masterful composition. When you read such a stirring and impressive appeal, didn't it arouse in you a determined desire to give to the Alumni Fund? So . . . ! On October 19 at the M.I.T. Faculty Club, Cambridge, 29 classmates, sons and guests gathered for another enthusiastic, lively and enjoyable class meeting, with cocktails and a delicious Bill Morrison dinner. **Pirate Rooney**, as youthful and as vigorous as in summer camp days, led off with a "we are happy" cheer. Attractive, useful and valuable take-home gifts enlivened the evening. **Pop Wood** gave a package of cocktail napkins printed in red with 1915 and the M.I.T. seal. **Ralph Curtis** gave a tube of household oil and a magnetic car key holder. My own company, Dexter Chemical Corporation, gave a hi-fi record cleaning kit to remove static and dust. All were well received. Then we had a colored slide show of the 1950, 1955 and 1960 Cape Cod reunions—a nostalgic review of when we were younger, slimmer and had more hair. A number of the fellows returned to our apartment to visit with Fran; and **Charlie Norton** and **Ben Neal** stayed over with us as house guests. **Larry Landers** has again set up our annual New York Class Dinner for Friday, January 25, 1963. **Bur Swain** will assist him. This has been a big yearly party for 1915. Plan to be there! **Al Sampson** spoke about our Annual Alumni Day Cocktail party at the M.I.T. Faculty Club; and again, in 1963, he and Barbara Thomas will put it on the afternoon of Monday, June 10. See you there! It was so pleasant to have sons of the class with us to share the evening and carry on our 1915 spirit: **Dick Brackett**, **Herb Eisenberg**, **David Hamburg**, **Peter Murphy** and **Gerry (Pirate, Jr.) Rooney**. **Bill Sheils** was celebrating his 16th wedding anniversary in Bermuda—oh, for one night of youthful bliss! Our regular associate, **Jim Hoey**, President of 1943, was with us, too. Long distance competition was as close as the recent World Series: **Larry Bailey**, South Duxbury; **Wayne Bradley**, Moosup, Conn.; **Wink Howlett** (out of retirement for the dinner), South Yarmouth; the **Lowell Twins**, always a great addition to the evening, **Reggie Foster** and **Chet Runels**; **Al Sampson**, **Beverly**; **Archie Morrison** and **Fred Waters**, Marblehead; now it really gets tight—**Pop Wood**, Peterboro, N.H.; **Charlie Norton**, again walked on the waters from Martha's Vineyard. And the winnah—**Ben Neal**, Lockport, N.Y. No finer classmates anywhere.

Unfortunate last-minute cancellations

hurt us: **Max**, **Speed Swift**, **Jack Dalton**, **Frank Scully** (in Europe), **Doug MacMurtrie**, **Bur Swain**, **Stan Osborne**, **Joe Livermore** and **Louie Young** (fishing on the Cape or so he said). Only 29 months to our 50th in June 1965, when we can all get together! At the dinner were: **Larry Bailey**, **Bill** and **Dick Brackett**, **Wayne Bradley**, **Evers Burtner**, **Sam** and **Herb Eisenberg**, **Reggie Foster**, **David Hamburg**, **Wink Howlett**, **Jim Hoey**, '43, **Clive Lacy**, **Larry Landers**, **Azel Mack**, **Archie Morrison**, **Frank Murphy**, **Harry** and **Peter Murphy**, **Ben Neal**, **Charlie Norton**, **Wally Pike**, **Pirate** and **Gerry Rooney**, **Chet Runels**, **Al Sampson**, **Jac Sindler**, **Ed Sullivan**, **Easty Weaver**, **Fred Waters**, and **Pop Wood**.

**Joe Livermore** wrote: "My plans have been changed and I will be flying back to Jamaica for three or four weeks to try to expedite the completion of the project I've been on for the past several months. I had looked forward with great pleasure to being with the boys of 1915 next Friday evening. I know you will have a grand time. Please give my best to all those present." . . . **Doug MacMurtrie** phoned me. He has 11 grandchildren—including 8 grandsons. He was on his way to Orlando for the winter, ah, me! . . . From Vienna, **Frank Scully** wrote he was visiting his son Bob's in-laws, after having been to Lisbon, Geneva, Zurich, Frankfurt, Karlsruhe, and was on his way to Paris and London. . . . And the old flying tripper, **Jerry Coldwell**, simply will not give up. From Bangkok, Thailand, he wrote: "The Defense Department part of my trip ends here. Then we are tourists. I went over to Quemoy Island from Formosa on a Chinese Air Force plane. I had to wear a life jacket as we flew only 500 feet above the water in order to be under the enemy radar. Last week I went from Manila to the South China Sea on one of our aircraft carriers. It's hot and humid out here." And the rest of us pay big to ride on those cruise ships. . . . At his Forty Acres Inn, Pike, N.H., **Wayne Bradley** had some Fifteneers. He wrote: "You will be interested to know that among our guests this year were two members of our class—**Lucius Bigelow**, who as you know has been retired as a professor at Duke University, and **Louis Zepfler**, retired from Esso in New Jersey. Both these individuals brought along their wives and had several enjoyable days at the inn. **Lucius**, although retired, is engaged in a new research project in which the government is interested in North Carolina. **Louis Zepfler** is currently living in Tucson, Ariz. Both are in good health and wanted to say words of greeting to the class and expressed an interest to be with them on their 50th Reunion, if we get that far." It's a pleasant place for other classmates to go.

From Belle Mead, N.J., **Cliff Sifton** wrote: "I'm looking forward to attending the 50th Reunion. In fact, if some of the wives will be present I'd like to bring Becky, who has put up with me for over 40 years! As our address indicates, we live out in the country. And I mean really out. That means, of course, that during the winter our roads are practi-

cally impassable for days at a time. Two years ago in March when we returned from a motor trip to Portland, Ore., via Los Angeles and Florida, the snow was so deep on each side of our road it reached much higher than the top of the car. It was almost like driving in a tunnel. I hope you are top hat, Azel. The Class of 1915 is fortunate in having a secretary like you, so enthusiastic and generous in your efforts in keeping the old gang together. With kindest personal wishes." Nice to hear from you Cliff and thanks for them kind words.

More wide-spread news from some of Al's returned cards last June: **George Fowler**, "In May, 1960, I retired from the U.S. Naval Underwater Ordnance Station, Newport, R.I. I have a son, a resident engineer at Chevrolet Corvair assembly plant, Willow Run, Mich., and one grandson. Another son with an M.S., is on the faculty at the University of Michigan and studying for his Ph.D." . . . **Loring Hall** was in Europe in June.

. . . **Greville Haslam**, "I'll be there sure in 1965—no news of interest here. Usual retirement activities governed by season—shovelling snow or mowing grass—a little shooting, a little fishing, miscellaneous travel, reading, puttering, haunting auctions hoping for the treasure antique. Best to all." . . . **Otto Hilbert** was attending a Rotary International Convention in Los Angeles. . . . **John Homan** was in Hawaii but plans to be with us at our 50th. . . . **Larry Landers**, active in community affairs, was at a Hospital Board meeting. . . . **John Little** was busy on his Jersey shore place gardening and looking out for his grandchildren. . . . **Joe Livermore**, despite his retirement, was in Jamaica on a consulting job. . . . **Carleton Lovell** and **Kenneth Roy** were both laid up with heart conditions. Too bad. . . . **Jim McIntyre** wrote: "After retiring from the Air Force I moved back to my home town, Montgomery, Ala. I am taking things easy and am president of the Mutual Cotton Warehouse Company. I have one granddaughter who will be 12 years old on the last day of this month. If any of the class ever get this far south please tell them to get in touch with me. Sorry I can't make the party." . . . **Bill Mellem**: "If all is well we plan to attend the 1965 Reunion, but not this year. Hope you have a most enjoyable reunion and Class Cocktail Party. Remember me please to the Course IV members who still remember me."

**Loren Miller** wrote: "I am now Dean Emeritus of Engineering at Michigan State University and have four grandsons not quite ready for M.I.T." . . . **Herm Morse**: "Compulsory retirement caught up with me December 1, 1961, after nearly 46½ years with Goodyear. Substituted for a professor at Kent State College for 10 weeks January to March, 1962, while he was recovering. I taught business administration to juniors and freshmen. Then Marjorie and I spent five weeks in and going and coming from Florida. Now I am trying to improve my yard and my golf game. Seattle in July and probably New England in the fall." . . . **Sam Otis**: "Nothing much to re-

port. I am presently serving on the local Preservation Committee for Architecturally Historic Buildings (Chicago Chapter of the American Institute of Architects). We have recently been very busy collecting samples of the work of Louis Sullivan, and other famous architects, from buildings now in the process of demolition. Members of my family in different parts of the country, are all doing well." . . . **Gil Peakes**: "I keep on being pleased to note your activity in and for 1915. Anne and I just returned from Seattle, a two weeks' trip to see the fair and renew friendship with my bunk-buddy in Naval Aviation Ground School at M.I.T. in 1918. Seattle space needle highly recommended."

It is sad to report the passing of one of our outstanding and popular classmates; **Ted Spear** died October 14 in Rumford, Maine. Ted had retired as vice-president of Oxford Paper Company and was serving as administrator of the Rumford Community Hospital. He began his career with the firm of Stone and Webster, Boston. From there he went to the Merck Chemical Company doing chemical engineering and development work. When World War I started, he volunteered his services and was placed in the Chemical Warfare Division of the Army, where he devoted his time to the manufacture of mustard gas. At the end of the war he became technical director for the Brompton Pulp and Paper Company, Quebec, Canada. In 1919 he joined Oxford Paper Company as an assistant to the general superintendent at the mill in Rumford. As a chemical engineer he laid the groundwork for the development of Oxford's modern Research Department. In 1929 he was promoted to mill manager and served in this spot for 24 years. In 1953 he was promoted to vice-president of public relations for the Oxford Paper Company. During his years in Rumford he had served on the committees of many local, state, national, civic and fraternal organizations. He was a member of the Rumford Community Hospital Board of Directors and previously served as chairman of the Board for 15 years.

For the past two years he has been the administrator of the Rumford Community Hospital. He was a member of the board of directors of the National Association of Manufacturers and a director of the National Safety Council. A past president of the Maine Hospital Association, he was serving on its Legislative Committee. He is also a past-president of Associated Industries of Maine and was chairman of the executive committee. He served on the board of directors of the Maine State Chamber of Commerce and was on its Legislative Committee for 1960. He was a member of the Androscoggin River Committee. He was a trustee of both the New England Higher Education Assistance Foundation and Portland University. He has been chairman of the Oxford Scholarship Committee since its inception 13 years ago. He was a member of the Rumford Finance Committee and had served on this important community organization for many years. In 1955, he was selected by Governor Ed-

mund S. Muskie to serve on a citizens committee to investigate the enforcement division of the State Liquor Commission. Besides his widow, Ted leaves two daughters, Mrs. Robert M. Morse, Dixfield; and Mrs. William N. Kinley, Millinocket; and four grandchildren. With the flowers we sent went the sympathies of our class to Ted's family.—**Azel W. Mack**, Secretary, 100 Memorial Drive, Cambridge 42, Mass.

## '16

We are glad to start off with a message from our ski-loving President, **Ralph Fletcher**: "I'm very pleased to open our column this month at the invitation of our congenial, hardworking and very effective class secretary, **Harold Dodge**. What a man and what a job he is doing for us! At the beginning of each year my thoughts are a mixture of sorrow and joy—sorrow for those who have left us and joy at being able to continue the many friendships which were started 50 years ago. What memories to look back on! What joys ahead to anticipate! Take advantage of every opportunity to meet with your classmates whether it be in your own neighborhood, in your travels, at the New York luncheons, or at the annual reunions. Write to our class secretary and help him keep up the interesting column which he has done so well for so many years. If you are in Massachusetts, be sure to come and see me. I was very happy to have **Obie Pyle** stop by not so long ago. Shortly after that **Ed Weissbach** visited the plant, and although I was short of time that particular day it didn't lessen my delight at seeing Ed. Begin laying the foundation now for the trip back to the Institute for our 50th anniversary. My best wishes to all for many years of good health and happiness ahead." . . . If you have never seen the latest in modern granite quarrying, a marvel that you'll hardly believe, just take Ralph at his word and go and see his quarry up in North Chelmsford!

As you well know, Ralph is always talking about some of the merits of the Class of 1916. We don't like to say too much about this, but did you notice who was on the cover of the November issue of *The Technology Review*? And have you yet read his article? You just must not miss **Van Bush's** "Two Cultures—Observations by the M.I.T. Corporation's Honorary Chairman to Alumni Association Officers," on pages 21-23 of the November issue. And speaking of Van Bush, did you see his picture in *Huck Finnegan's* sports column, *Boston Record American*, October 30? The discussion was about Tufts, now "a small college football power," but "a major football power" in the years 1912-1919—and "the manager of the 1912 Tufts team was Vannavar Bush." . . . Early in November, the **Bill Leaches**, at their summer home in Youngstown, N. Y. (we just looked it up in our atlas), were about ready to pack their bags and their trunks and return to Austin, Texas. Bill notes that he was up

at the Institute on October 23. Then he says something about something we are all experiencing these days—that he doesn't seem to bounce back the way he used to—has lost some elasticity—when ever little things happen. He is an enthusiastic reader of **Irv McDaniel's** travel accounts.

Looking through the October 1962 Rutgers Newsletter (where editorially, we are still a professor in the Statistics Center, Graduate School), we ran across this item of 1916 significance: "Dr. **Rudolph E. Gruber**, a retired vice-president of Merck and Company, has given \$35,000 to the University for a memorial to his late wife, Mrs. Rita Welch Gruber. Dr. Gruber, who served on the College of Pharmacy Advisory Council for 28 years, has asked that the rare book section of the library at the College of Pharmacy be named for his wife, who died in 1960." . . . The **Bob Wilsons** had five weeks in Europe in September and early October during which Bob kept busy on a number of AEC business items. Bob returned home by air—Pearl stayed over to return by ship, but on October 6 in Florence, while climbing the high stone steps of an old Roman amphitheatre, she lost her balance and had a bad fall—nine cracked or broken ribs, multiple bruises, and a cracked collarbone. At that time, Bob wrote: "She was 'knocked cold' for a considerable time—how long no one knows. But when she came to, two hooded figures in monk-like costumes were putting her into an ambulance and her first thought was that they must be grave-diggers!" Bob flew back to Rome, and with the help of the American consul and a doctor from the American Army Hospital in Camp Darby, made arrangements for suitable hospital care and convalescence. Pearl actually flew back to New York on November 9 and got home to Washington the 10th. All in all, it was "a nightmare" says Bob, but he is high in his praise of the doctors and nurses at the Army hospital. On October 29, Bob, as Commissioner, U. S. Atomic Energy Commission, spoke on the subject: "The Future Prospects of the Peaceful Uses of Plutonium," at the Dedication of the New Plutonium Facilities of the Nuclear Materials and Equipment Corporation, in Apollo, Pa. He indicated the advantages to be expected from the steps now being taken toward private ownership of the fuel supplies of the nuclear power industry.

**Ray Brown** writes that he and his wife returned on October 10 from a two months' trip to Europe. He "saw the usual things and some unusual." We must ask him for an accounting of the unusual. Late in October they were in Boston where he visited "the splendid new laboratory of Comstock and Wescott, Inc.," to congratulate Dr. Comstock on the 50th anniversary of the founding of Comstock and Wescott. "A number of Tech men including myself have been and are in the employ of this company." . . . Late in September, **Obie Pyle** tells of driving back to New England from home in Flourtown, Pa.; they were driving son Randy back to Harvard. After getting Randy settled in

his dormitory, they drove up to Tyngsboro and West Chelmsford for a short visit with Ralph, with two of Obie's sons, and with eight grandchildren. We, **Jim Evans** and others, have asked Obie to try to plan his trips to New England so that he can stop off in New York City at one or more of the 1916 monthly luncheons. . . . **Maury Holland** "broke out of retirement" in September at the 16th Annual Conference on Research and Administration in French Lick, Ind. About 150 top science administrators, divided among industry, government, and the universities, meet annually to discuss new and advanced organization and management techniques, procedures, and tools that are in use in R. & D. Maury, who is known as "Block Buster Holland," spoke on "More Science Breakthroughs for Fewer Bucks." "Those who are spending \$12-15 billion of the taxpayers money, Washington politicians, and voters are beginning to suspect that they may be being 'sold a bill of goods' especially in space." Maury's talk will be published in an early issue of "Business Management."

**Irv McDaniel**, in one of his recent letters from Spain, mentions: "One of my superstitions! Always get a room or cabin ending in '16—it pays off! Here it is 416." Sounds something like Ralph Fletcher in was-it Austria, where he had Table 16 in a famous eating-place! Going back to Irv, he continues from an earlier letter: "In my last letter I wrote how Kay had gone shopping in Paris and that nothing interested her (?). That was the week our gold reserves at Fort Knox hit a new low. That was my Kay! I finally got her out of Paris, and we had a beautiful trip South. The middle southern area of France is delightful. We went by Montargis, Nevers, Riom, Clermont-Ferrand, and Marvejols with its old XI Century gates and walls, a most interesting village. The next day we went through a very hilly section with wonderful vistas via Millau, Lodeve, to Beziers, Narbonne, and into Spain. No inspection, no trouble, but the tourist traffic was terrific. In Madrid we stayed at the Palace—air-conditioned, and we needed it."

Irv gives some specific recommendations about works-of-art to be seen: "We really saw the Prado this time—almost two days and with our past visits we know the place. It is an 'excellent picture gallery' but to compare it with a museum such as the Louvre or the Metropolitan is not fair. For the periods it covers, it is outstanding, has superb collections of the Spanish masters plus some exceptional items I will list." We're not going to give the conversation that followed when, in the Goya rooms, an American, about 65, asked Irv what he thought of Goya's "La Maja." But Irv says: "Don't miss these items: 'Lady of Eiche' (Room 71), prehistoric Mediterranean Goddess of Fertility, with head-dress like they wear in Avila, terrific; 'Fall of Man' (Room 51), an old Romanesque Mural of 1125—they took the entire nave of the church to the Museum: best example of early primitive; Bosch (1490) (Room 65), has two triptychs that are not for children. . . . Durer's

world-famous 'Adam and Eve'; Fra Angelico (1387-1455), 'The Annunciation,' painted on wood in tempera—the detail in divine simplicity; so sincere it was painted from his heart; it is not human art, it is divine art. Titian has several masterpieces there—his 'The Bacchanal' is one, so is his 'Our Lady of Dolours', such intense sorrow is displayed it wrings your heart—his 'Venus Delighting in Music' struck me as being funny; it is one of his best nudes but the man playing the organ is looking over his shoulder. . . . The great American horde goes there to see El Greco, Velasquez, and Goya. Go downstairs and see Goya's black period when he was demented. I don't think Goya is comparable with the great masters. El Greco should be seen only in Toledo. But I do like Ribera (1591-1652) and Murillo's cherubs (1618-1682) are divine. Rubens and Jordaens have plenty of their meaty hussies there. Also note Zurbaran's style. As you can see, the Prado has some excellent collections and items, but it also has a lot of inferior work even by the masters." We can send greater details to '16ers who want more information.

From **Cy Guething** via **Jim Evans** comes what may well be the "1916 Picture of the Year," clipped from the October 5 issue of the Detroit Free Press, and showing our **Phil** and **Thelma Baker** over the caption "Symphony's dazzling first-nighters included the Phil Bakers." They certainly look pretty nice! Apparently, on Thursdays, they always go to the Detroit Symphony—something that started (symphony-going) in Boston 'way back in 1914. We understand that Phil goes to the office two or three times a week, and that he still bowls once a week at the D.A.C. where he has bowled consistently for some 32 or 33 years. The Bakers' daughter, with two fine boys, lives on adjacent property, making it convenient, we are sure Phil would say, if he runs out of eggs or liquor. Cy Guething speaks of October as his favorite time of year: "the pep in the air, the beautiful coloring." He continues to do his own gardening, and regularly walks to town instead of driving the car. Says his doctor says that plenty of exercise is the best thing older people can do—but not beyond the point of getting tired. He mentioned that they might drive down to the mountains in Virginia, as is their custom each year, "to visit Gyps' brother in Huntington". . . . **Ed Hall** writes from Baltimore that he has enjoyed his first five years of retirement and believes the next five will be just as good. Says: "If the climate is right, will go to Marathon, Fla., where we have a home, for about four months, to get away from the snow and winter wind. Marathon, being 50 miles away from Key West, is close to present activities."

In October, **Bill Drummey** was three weeks in Scandinavia largely because he "had never been there before." He notes: "Vacation was marred by a vicious dose of arthritis, not aided by their fog and general dampness. But I liked the place—particularly Copenhagen. One lively little city—think it is well that I am an Old Goat else I might enjoy it too well.



I believe the Danes are the only friends we have in Europe." Bill went over on the 'Gripsholm,' "easily the best of some 20 liners I have been passenger on." At the time of writing, he was staying a while in his home on the Cape Cod Canal, "drugging and baking the pain from my back—a strange malady, lasts about a week, then departs for several months." Then Bill adds he is suffering from an incurable disease, "sixty-nine!" . . . The sports column clipping about Van Bush was sent in by **Steve Berke**, one of your secretary's news sleuths. Steve sends also this word picture: "Three '16ers in front of the Ritz-Carleton last week, October 24 or thereabouts. **Iz Richmond** telling **Dave Patten** and the writer about his weekend flights over Cape Cod. Iz eats lunch in the cafe every day." Then Steve adds: "For the Ladies Auxiliary—Louise is taking off for Arizona on November 17 to test the climate for relief from the constant pain. Expect to follow her in a couple of weeks."

**Emory** and **Ruth Kemp** were called back from their new Florida home to Wellfleet for some three months starting in July, when their daughter Virginia was in a terrible accident on the Cape. With her three children and two others, her Valiant was struck on the driver's side by a sand-truck (10-wheeler) going 55 miles an hour. Emory's account of all the injuries is truly shocking. After four weeks in Hyannis Hospital and three weeks in the Massachusetts General hospital, Virginia was brought home, and at the end of October was "slowly recuperating, learning to walk again, and growing a new head of hair." As Emory says: "The doctors have just marveled at her fast recovery a great deal of which has absolutely been due to prayers." . . .

**Russ Lowe**, in Fort Pierce, Fla., says their annual three months' visit to the New England states and the Canadian Maritimes was marred this year by rain and cold. Says: "In fact, for us Floridians, the hinterlands of North Carolina proved to have the most equitable climate. Of course, I caught my quota of trout on P. E. I. and, as a bonus, discovered a superb Atlantic salmon river in Cape Breton Island, Nova Scotia. This one receives no publicity because, amazingly, no license is required." (Question: Does **Francis Stern** know about this?) Russ finishes with: "In spite of the weather it was a delight to be with old friends again—the principal reason for our summer wanderings." . . . **Charles Paugh** tells of being pleasantly settled in their new Florida home in Tequesta Country Club Community and is fully enjoying retirement. He speaks too of spending the summer on their island in Canada—says they plan this as an annual event.

And now a word about recoveries. We have been able to observe at first hand that **Harold Mills** in Mountain Lakes is making slow but sure recovery from his spinal problems since he had a goodly period under traction in a hospital late in October. . . . Again, as of the first of November, **Bill Barrett** got this kind of word from his doctor: "no reason for not putting in a full eight-hour day at the office." This comes from following orders

since back in July when he had a slight heart attack; Metropolitan Life gets back its secretary and vice-president. . . . And speaking further of recoveries, **Jim Evans**, down with a heart attack in August, was back in his role of usual attendant at New York luncheons on November 8, and looked well with his 18-pound loss of weight. He acted bouncy and could hardly wait to get back at his job as substitute in the high schools in Paterson, N. J. The November luncheon was well attended with Messrs. Binger, Caldwell, Dodge, Evans, Mendelson, Stern (from Hartford), and Stone, all at a really crowded table in the good company of '17ers Loengard, Morton, Neuberger, Proctor, and Sullivan. Out-of-towners are especially urged to plan their New York trips to fit in with these class luncheons which take place the Thursday following the first Monday each month, at the M.I.T. Club of New York club rooms, Hotel Biltmore. Letters received from **Stew Rowlett** in Clearwater, Fla., almost invariably mention that he misses the monthly get-togethers at the Biltmore. A recent letter from him notes how lazy one tends to get in Florida, that everything is "manana" which he says means "put it off until tomorrow." Stew reiterates that Irv McDaniel should write a book (this is an oft-repeated bit of advice from many '16ers who have had the pleasure of reading a letter or two from Irv), and says that Irv's ship back to the continent, touched in Tampa "18 miles from here. Wish he'd known I was here."

**Mac McCarthy** is getting around plenty again in his new job as president of the non-profit non-government Flight Safety Foundation, as evidenced by his missing the New York luncheons again. Early in November he attended the fall meeting of the Aerospace Industries Association in Phoenix and was planning in December to be at Williamsburg, Va., at a three-day Air Safety Seminar sponsored by his foundation. . . . **Henry Shepard** in August tells of a steam-car meet in Woodstock, Vt., 10 Stanleys and 1 White all steaming around under their own power. His 1914 10 HP model went 364 miles in the four days they were away, and "the only trouble I experienced was that my pilot went out once. It was lit again with an old-fashioned match and we were on our way again." Henry says the Stanley averaged 13 miles per gallon of fuel (one half kerosene, one half no. 1 fuel oil) and went better than a mile on a gallon of water. As he has only a 40-gallon tank for water, it was necessary to stop every 35 miles to fill up again. But "I was able to average 25 miles per hour on the trip including time out for water." The restoration of his 1910 Cadillac is now held up until he can get a complete rear-axle assembly for it. If you know of anyone who has one and will sell, write Henry, 256 Highland Street, West Newton 65, Mass.

**Dina Coleman** looks pretty good to us as one of a panel of six on a bulletin covering the "Second Annual Kentucky Conservation Congress" held in Louisville in October. Dina spoke on "Clays and Shales." The former governor of

West Virginia also spoke. Active in education circles, Dina mentions that the voters finally gave the school board tax money to build five million dollars worth of schools in the county, and "we expect to house some 7,000 students at a price per child much, much less than you people up Nawth figure." He also speaks proudly of the fact that Transylvania College, of which he has been chairman of the Finance Committee (and still may be; we are not sure), "is out of debt for the first time in 35-40 years, due to gifts and grants from its own board of curators and the excellent money-raising ability of our president. In the last four years we have built three new dormitories and a new classroom building without any assistance from the federal government. We have upgraded our professors' pay scale and have toughened the entrance requirements considerably." We are proud of you, Dina, and won't mention that honorary doctorate you received in 1960 (very often, that is). . . . **Dan Comiskey** writes from Needham: "As a semi-retired classmate, I am, it seems, busier than ever, in fact I do not see how I carried on in business in addition to family business. Before one generation moves on, the third and fourth generations are on the scene." Dan said they hoped to return late this fall to see the changes in New Mexico and Arizona. . . . At the end of September, the **Jack Burbanks** were looking forward to "a fine Cape Cod winter." Jack mentioned that the state was stocking the mile-long pond adjoining his property with rainbows, browns, and brook trout. He had caught three rainbows (they run 12-15 inches), four brookies (these are smaller—10 inches), but "only two brown trout have graced our hooks and breakfast table." Golf was still going strong, and he has a greenhouse under way; by December 15 he expected to have camellias in bloom; these would last until mid-March. Jack continues to make the Cape sound very good! . . . **Ted Strieby** tells of spending three months in northern Vermont, where he especially enjoyed his daughter and family, including two grandsons, 6 and 8; we understand what he means when he says they were "fortunately" in a separate cottage. Apparently the youngsters kept him busy with swimming, fishing, building and flying kites, croquet, badminton, etc. He got back home in Milburn, N.J. (home for over 40 years) in September to tackle various jobs around the house and yard, and to take on some part-time consulting in telemetry and data transmission. He was soon to be off to Los Angeles to visit his son Michael (ScD., M.I.T., '55) and family. Michael works on information systems (including Apollo) with North American . . . We have **John Fairfield's** account of the trip he and Mrs. Fairfield took around the world last spring—but this will have to wait until the next issue. In the meantime, send in your bits of news or mature philosophy to your secretary. Best wishes from your officers for a prosperous and healthful New Year.—**Harold F. Dodge**, Secretary, 96 Briarcliff Road, Mountain Lakes, N.J.

Cheery 1963 New Year's Greetings are a fitting prelude to the first set of class notes for 1963. As these notes are being written (Nov. 3 a rainy Saturday which has eliminated the prospects for a workout on the golf course), we have received about 50 replies to the questionnaire. While these will be summarized when more have been received, and some of the results published in this column, two items deserve publicity. **Ralph Ross** is leading at the moment with 5 children, 21<sup>17</sup>/<sub>18</sub> grandchildren, and 1 great-grandchild. **Ken Richmond** is a close second with 4 children and 15 grandchildren. While we have not heard from **Dean Parker**, we are quite sure he will be a strong contender for honors. We urge all who have not sent in their questionnaires to schedule the job for early attention.

The newspapers of Elgin, Ill., of October 17, featured articles concerning the acquisition of the Elgin Manufacturing Company by Doughboy Industries, Inc. Pictures of **Rad Stevens**, President of Elgin Manufacturing Company, and his son **Albert R. Stevens**, vice-president, were prominently displayed with executives of the Doughboy Company. **Rad** writes: "I did reserve for the 45th Reunion, but then had to cancel, and I can now tell you the reason. We started the first of 1962 on the sale of our concern to Doughboy Industries. Things were coming along very well when the May 28 crash took place, and then, of course, everything went out the window, and we had to start all over again. However, the deal was finally culminated to our complete satisfaction. My son goes in as general manager, and I become a vice-president of Doughboy as packaging machinery consultant, so will continue work although not as strenuous as in the past." The following brief excerpts are from the news articles: "The Elgin Company was incorporated in 1897 and during the last 23 of the 65 years it has been in business, the firm has been controlled by the Stevens family. The Elgin company is engaged in the manufacture of automatic packaging machines used by leading packers in the food, paint, cosmetic and oil industries. Currently Elgin sales are running in excess of \$1 million."

The Bridgeport, Conn., Sunday Post of September 30, 1962, reported the following: "**Arthur E. Keating**, President of the Bridgeport Engineering Institute, will be the guest speaker at a meeting of the Young Men's Industrial Forum October 2 at 8 P.M. in the YMCA. Mr. Keating will speak on the topic, 'Common Sense on the Management Frontier.' Mr. Keating began his career at the American Tube and Stamping Company, as assistant chief engineer in 1917. In addition to being president of the Bridgeport Engineering Institute, he is professor at Northeastern University, and a member of numerous engineering societies."

During the fall, three of our classmates passed on. On October 10 **Clarence G. Holt** died in the local hospital at Keene, N.H. He was born at Plymouth, Conn.,

May 31, 1894. After graduation, he spent one year in the Army Air Service flying training, and about five years with General Electric and Western Electric. In 1924 he joined the family business, the New England Screw Company in Boston as vice-president and secretary. In 1940 the firm transferred to Keene, and in 1947 was sold to Central Screw Company, of Chicago. Mr. Holt was the holder of a number of patents. He was active in the civic and church affairs of Keene. At M.I.T. he was graduated from the course in Electrical Engineering, and was a member of the Electrical Engineering Society, Wireless Society, and Engineers Corps.

**Harry S. Toole** died suddenly at his home in Swarthmore, Pa., on September 24, 1962. He was born December 23, 1892, in Bangor, Maine. He was a graduate of the University of Maine prior to entering the Institute. The greater part of his business life was spent with the DuPont Company. He retired about two years ago. At DuPont he specialized in textile and finishing machinery, and process development problems. He was a member of the research group that developed the nylon process. Prior to retirement he devoted his talents to consulting work for the company and development work and special studies relating to textile equipment and processes. . . . **Howard R. Stewart** died on September 26, 1962, at his home in Bryn Mawr, Pa. He was born December 15, 1892. He was a graduate of Course XV. He had been a co-owner of the former Stewart Boiler Works, Worcester, Mass., which was founded by his father. He was later general manager of Economic Machinery Company. About six years ago he moved to Pennsylvania, where he founded H. R. Stewart Enterprises, a promotional concern. In his youth he was active in athletics. He played golf, and was an intercollegiate tennis player. He leaves his wife, two children and nine grandchildren.

Professor **Robert S. Mulliken** of the University of Chicago, called by one colleague "a tower of leadership in Twentieth Century physical chemistry," will receive the American Chemical Society's \$2,000 Peter Debye Award in Physical Chemistry, sponsored by the Humble Oil and Refining Company, for his work in molecular chemistry and physics. He has been granted honorary doctorates by Columbia University and the University of Stockholm. Professor Mulliken participated in the plutonium project during World War II and is presently professor emeritus of the University of Chicago and active as a teacher. . . . As evidence that many classmates are moving to New Hampshire, perhaps for tax reasons, or because it is just a good place to live, note the following from **Ken Bell**, whose address—for reasons that will be indicated later—is The Belfry, Melvin Village, Mirror Lake P.O., N.H. "We have had quite a lot of contacts and visits with 1917ers since the June reunion. **Walt** and **Christine Beadle** came up here with us Alumni Day after the dinner and stayed two days. In September, **Barney** and **Constance Dodge** came to our sum-

mer home from Sunday to Tuesday and they showed us their movies of their Scandinavian trip of this summer. **Bob** and **Pat Erb** came over in their Christ-craft in July, and we gave them some ivy which is flourishing around their estate on Governor's Island—across Lake Winnepesaukee from us. **Rudy Beaver** and **Helen** had the **Ken Lanes** and the **Bells** for lunch at their summer home on Lovell Lake—some 25 miles east of here—in September, and the next week **Rudy** had a blood clot on the brain and was taken to Huggins Hospital in nearby Wolfeboro, N.H. He made a rapid recovery and is still convalescing at his summer home. So when **Ray** and **Katherine Stevens** spent the Columbus Day weekend with us, we took them over to call on **Rudy** and **Helen**. **Rudy** has recovered almost completely, and he and **Helen** are coming here to lunch tomorrow. **Ray** and **Katherine** wanted to see **Phil Crystal**, so we went a half mile up our shore to their summer home, and found them.

"In May we offered the White House a mahogany Empire chair, which my great-uncle, **William J. McPherson**, bought when he redecorated the East Room in 1873 for President Grant's daughter's wedding. As Grant did not care for the mahogany furniture, Mr. McPherson brought this chair home and I inherited it in 1943 from his niece. I had a phone call from **William V. Elder** of the curator's staff of the White House shortly thereafter accepting the offer. The chair was delivered July 4. They said they had never seen one of these chairs, but old pictures of the East Room showed them. **William King** of Georgetown, Md., made a set of these chairs in 1818, and they were delivered during the Madison administration. So, you see, this is one of the few chairs given which was originally in the White House. It will be used in the Red Room. I received a letter from **Jackie** after she returned from Italy, and we are to have a special tour of the White House to see the chair in its new home when we visit our daughter in Baltimore."

The following are a few random notes: **Al "Peso" Moody** reports: "I got back to Denver the 1st of August and as far as I know now, will be here from now on. I have no work in sight and do not want any for a while." . . . **Bob Erb**, President of Melville Shoe Corporation, introduced **Francis H. Gleason**, President of J. F. McElwain Company, at a meeting of the Newcomen Society at the Nashua, N.H., Country Club on October 5. Mr. Gleason presented the formal address. **Bob** was formerly president of McElwain Company. . . . By way of diversification from the list of hospitals and charitable organizations, **Enos Curtin** has been made a director of the New York Rangers Hockey Team and predicts that they will soon move out of fifth place in the league. . . . **Frank Peacock** is on his way to Tokyo and then on to London and Ghana on a Hydro Engineering project. . . . **Dix Proctor** is to be busy this winter with a real estate development project in his neighborhood (Lincoln Park, N.J.) in lieu of his usual ocean cruise of several

months. . . . As many of you know, **Lobby** had to leave the high altitude of Cuernavaca and enter the Methodist Hospital in Houston in early October. We are confident he will be back in circulation by the time these notes are in print. For the time being he and Conchita will probably live in Houston. Until we are sure of his new address, he suggests you send any mail to him in care of the Alumni Office.

The Hartford Sunday Courant recently published this anecdote: "A social director at a large Honolulu Hotel has devised a simple set of instructions for mainland tourists who want to learn the hula. 'It's very easy,' he explains 'You simply put some grass on one hip, some more grass on the other hip. Then you rotate the crops.'—**W. I. McNeill**, Secretary, 107 Wood Pond Road, West Hartford 7, Conn.; **C. D. Proctor**, Assistant Secretary, P.O. Box 336, Lincoln Park, N.J.

## '18

Old age should be a source of understanding and a place of calm, not only because the responsibilities of the factory, the office and the market place are dropped one by one, but because life's hardest lessons have been learned (if they are ever learned). Then, too, it is the time when harvests are reaped. High tribute was paid **Hall Nichols** (civil engineering) at the meeting of the Massachusetts Commission on Administration and Finance on the occasion of his retirement October first as director of the Division of Building Construction. Hall received a resolution commending his "long, faithful service" in supervising since 1953 paper work covering over \$25,000,000 per annum in construction for the state. He was praised as a "tower of strength whose judgment has rarely been set aside by the Commission." In August, 1933, he undertook a temporary two-year assignment as secretary to the Emergency Public Works Commission and stayed 29 years, becoming director and chief engineer of the Massachusetts Public Building Commission in 1947, at which time it assumed the duties of the former commission. Because old age is a source of understanding, from time to time the state will call on him as a consultant.

The bountiful harvest to be reaped from my resurrecting "Getting Across"—the Tech Show of 1916—still goes on. **Sherman MacGregor**, offers the latest addition. He originally did a neat civil engineering thesis on the elimination of the grade crossing at Union Square, Rockland, Mass. He then went on to eliminate all his civil engineering by crossing over to the radio, theater, and TV world, where he became known as "Jock." He says, "The recent notes on the Tech Show have been interesting to me as an old Tech Shower and have caused me to wonder whether I may not have a slight distinction in that respect. As you may remember, I was in the Tech Show our freshman year, wrote some of the lyrics our junior year, and wrote almost all the

song lyrics our senior year, in addition to taking an active part as one of the cast. And how I loved it! But now I wonder—am I the only one who ever worked in the Show and went on to end up as a professional actor-director-writer? I have sometimes wondered whether it may be disgraceful to attend an institution such as M.I.T., only to desert it completely for what has in the past been considered a disreputable career on the stage. But the real truth is that if I had my way, I would never have gone to M.I.T. in the first place—I would have joined the ranks of the stage-struck kids at some school which pretended to fit one for success in that most questionable career. But coming from a good strict New England family, one does not "go on the stage" as a business! As a pastime, it's OK, but not otherwise! I wonder whether anyone else ever disgraced himself by ignoring an M.I.T. training, and got into show biz instead. Do you know? I don't. I was sorry to hear that **Bill Wills** had died. Over the years, we built up quite a friendship by mail. He always decorated the notices he sent me with little personal illustrations and such; he even sent me one of his books. He was quite a guy. May he rest in peace, and not feel a violent urge to remodel in colonial style wherever he is now! I still enjoy doing what I do, so life is worth living. I hope you find it that way too."

With both calm and understanding comes a letter from Harold Dodge, secretary of the class of 1916, continuing in a particularly nice little way the big brotherliness his class showed us when we were freshmen. He says, "Last week for two nights I slept in a room, from whose window I could see Mount Monadnock. Getting home, I kept looking at a little cut-out from a card you sent me a year or so ago, looked on the back of it, and sure enough, you had written 'This is the view from my front porch. The top of Mt. Monadnock is two miles away across the pond on the shore of which I live.' I next looked in the M.I.T. Directory and sure enough—you live in Jaffrey Center. We had been seeing sign posts all around giving directions to Jaffrey. We were visiting my sister and her husband (C. J. Sittinger, '10) who have just moved to Peterborough after some 40 years or so in Winchester. This put us in your neighborhood. Beautiful country you live in—it should continue to make your writings poetic."—**F. Alexander Magoun**, Secretary, Jaffrey Center, N.H.

## '19

A newspaper clipping concerning the death of **Herbert Barrett** in August says that he served as a lieutenant with the army during World War I. He was awarded the Distinguished Service Cross and the Purple Heart. He was an active member of the Legion of Valor and the Disabled American Veterans. . . . In September **Dr. Marshall C. Balfour** spoke to the Marlboro, Mass., Rotary Club. He was for many years with the Rockefeller Foundation and is now with

the Population Council. . . . **George Kahn** who has been chief of the Bureau of Disease Control for the Boston Health Department, was recently appointed to the joint position of School Physician and Director of Child Health for Brookline. For many years Dr. Kahn was an instructor at the Boston University Medical School. . . . **Earl P. Stevenson**, who was recently appointed president of the Boston Chamber of Commerce, has been named chairman of the Industrial Applications Advisory Committee of the National Aeronautics and Space Administration. The principal function of the committee will be to assist NASA management in an organized effort to transfer new scientific and technological knowledge from NASA's research and development program to industry.

New address for **Frank P. Reynolds** is 521 W. Venice Avenue, Venica, Fla. He has recently sold his home in East Walpole, and he and his wife will live at the Venice address for eight months of the year. . . . **George McCarten** wrote advising me of his new address. He and Mrs. McCarten now live at 14 Pleasant Street, Lancaster, N.H. He says that they have bought a 100-year house about 50 yards from the house where he was born. There is a nice barn with tie-ups for three horses and four cows; two single garages; and big elm trees on a big lawn. They are remodeling the house, tearing out a partition to make a 14' x 28' living room and erecting a brick fireplace. He says "It's amazing after 100 years the doors and door frames are square and plumb and the pine lumber makes one drool. Those guys knew something about insulation and heat transfer. They filled in between the studs with corn cobs. Looks like pretty fair dead air space." In July, the McCartens went up on the Minamicki River in New Brunswick for a week's salmon fishing.—**Eugene R. Smoley**, Secretary, 30 School Lane, Scarsdale, N.Y.

## '20

**Ned Van Deusen** was in Boston briefly in November and was kind enough to take time for a visit with his class secretary. Ned, who is looking very fit, is leading the life of a country squire in his exceedingly attractive and comfortable looking ranch home on Spring Hill Farm, Julian, Calif., south of San Diego. He maintains a keen and active interest in the Marine Corps veteran flyers' organization, of which he has served as chief officer, which takes him to Washington occasionally. Ned says his wife is "one of the poor DuPont's" which leads very nicely to a mention of "The Poor Rockefellers," the recently published autobiography of our esteemed classmate, **Johnny Rockefeller**. We are indebted to Carole Clarke, the good and faithful secretary of the Class of '21 for a story on Johnny and his book in the Newark Sunday News. Says the News: "That the author of 'The Poor Rockefellers' is poor only by comparison to Nelson, John D. III, et al., becomes quickly evident when one



considers the fact that he lives in a 40-bedroom Tudor home at 62 Hawthorne Road in Short Hills, never known to be a poverty-stricken community." As we have mentioned in these notes before, Johnny is a consulting engineer specializing in the printing industry, with an office in Short Hills. His book has been favorably reviewed. It contains interesting observations on the effect of his illustrious name. His grandfather who was John D.'s second cousin (Johnny's middle initial is "W") was a manufacturer of hoopskirts and a noted inventor. Johnny says he has never met the rich Rockefellers but that the governor of New York has ordered a copy of his book.

A feature article in the Providence Sunday Journal contains much interesting and welcome information about **Johnny Nash** and his company. Johnny is president and treasurer of Marshall and Williams Corporation, Providence, manufacturers of textile finishing machinery and plastic film machinery. The article refers to Johnny as the driving force behind the company's recent success and growth, as evidenced by erection of an addition to its plant last year that doubled its floor space. . . . Another classmate in the news is **Art Radasch**, who has been appointed acting dean of Cooper Union School of Engineering where for the past 24 years he has been head of the Department of Chemical Engineering. Professor and Mrs. Radasch live in Montclair, N.J., and are co-authors of "Register of the Ancestors and Descendants of Samuel Warner of Wilbraham, Massachusetts." . . . **Charles Moore** has moved from Fullerton to Del Mar, Calif. . . . **Winslow Wetherbee** has moved from Burlingame, Calif., to Medford, Ore., address 416 Rogue Valley Manor. . . . **George Dandrow**, '22, and **Perk Bugbee** thoughtfully advised me of the death of our beloved classmate **E. Kenneth Clark**. Ken had retired from Johns-Manville to his home "Timber Trail" in Sherman, Conn. He also had a home in the Virgin Islands. He is survived by his wife, Fannie.—**Harold Bugbee**, Secretary, 21 Everell Road, Winchester, Mass.

## '21

Happy New Year! . . . As we go to press, the Silver Stein Award Dinner of the M.I.T. Club of New York, is scheduled for Thursday, January 24; but we have learned that our Class President, **Ray St. Laurent**, has been accorded the privilege of making the award of the Silver Stein to **Irv Jakobson**. Better contact the New York Club or your secretaries right now as you read this and make certain that you and your wife have reservations to be with the large Class of '21 contingent that will be present to help celebrate Jake's well-deserved honor. . . . Once more we can report a distinction for a member of the Class of '21 with respect to a member of the newest freshman class to enter M.I.T. **Brian R. Pearce**, '66, of Eau Gallie, Fla., is the grand-nephew of our own **Fred M. Rowell** of

Mattapoisett, Mass. This brings to 71 the total of sons, daughters, nephews, grandsons and grand-nephews of '21ers who have attended or are now attending Technology. Brian will join current undergraduates **George R. Thomson**, '63, son of the late Dr. **George Thomson**, and **Michael P. Sutherland**, '65, grandson of **Ed Dennison**. With the exception of the classes of '45, '61, '62 and '64, these 71 offspring have represented every class from 1942 through 1966.

It is good to hear that our beloved **Jim Killian**, '26, Chairman of the Corporation of M.I.T., is fast recovering from his recent illness and looks forward to an early return to normal activities. He has the best wishes of everyone in the class. . . . At this point in time, your secretary, in common with many others of 1921 on the M.I.T. Educational Council, is engaged in interviewing prospective members of the Class of '67 and visiting neighboring high schools with such august personages as Assistant Directors of Admission **Pete Leavitt** and **Dick McDowell**, '60. In company with **Ted Edison**, '23, we were also fortunate in being able to visit the SAGE installation at McGuire Air Force Base with a group from the M.I.T. Club of Northern New Jersey as the guests of **Carlo N. DeGennaro**, '53, Colonel, U. S. Air Force. . . . **Charles A. Breed**, formerly of Newtonville, Mass., has retired from the **Jenney Manufacturing Company** and now receives mail at R.F.D. 4, Laconia, N.H. . . . **George** and **Muriel Owens** report their seasonal trek to the warmer climes of Vero Beach, Fla., where you can address those belated holiday greetings to P.O. Box 3025. . . . **Dick Windisch** continues as a partner in the firm of **W. E. Burnet and Company**, 80 Pine Street, New York 5, N.Y.

**Ray St. Laurent** says he participated as the official representative of M.I.T. in the academic pomp and splendor surrounding the inauguration of **Dr. Homer D. Babbidge, Jr.**, as the eighth president of the University of Connecticut. The September issue of the "New England Printer and Lithographer" has a screaming banner headline, proclaiming: "**Garvin M. (Mich) Bawden**, New England Manager for Dexter Company, retiring after 40 years with company." The article continues: "Garvin M. Bawden retires on September 30 after 40 years with the Dexter Division of **Miehle-Goss-Dexter, Inc.** Mich joined the **Cleveland Folder Machine Company** in 1923. He started in the engineering department and, two years later, was transferred to administration as manager of the company's Philadelphia office. When the company was purchased by Dexter in 1930, he was transferred to New England as assistant to the regional manager. He became the New England manager in 1933, a post he held to retirement. Born in northern Michigan, he attended **Phillips Exeter** and M.I.T. He is a member of the **Boston Club of Printing House Craftsmen**, the **Boston Litho Club**, the **Bookbuilders of Boston** and the **Graphic Arts Institute of New England**. He expects to find time for some of his hobbies—boating, fishing and golf—

around his home in Duxbury, Mass." What the article didn't relate was that **Buzz Burroughs**, '20, emceed the retirement festivities at which Mich was appropriately recognized by a host of friends.

You have now received the annual report of the Amity Fund and have had an opportunity to compare the performance of the Class of '21 with that of the 67 groups reported. Despite our being the 39th smallest in number of Alumni on our active class roll (564), our total giving for the year was the 8th largest amount, thanks to the perseverance (and perspiration) of those hard-working Class Agents **Ed Farrand** and **Larc Randall**. . . . **Saul M. Silverstein** was a recent speaker at the fall meeting of the Franklin County Industrial Management Club in Greenfield, Mass. Saul also was one of some 300 prominent businessmen, labor leaders and public representatives invited by President Kennedy to attend a White House Conference on National Economic Issues. Another honor came in the form of an invitation from the State Department to attend a National Conference on the International Training Progress of the Agency for International Development. Saul's firm, the **Rogers Corporation**, has received excellent mention in the public and technical press for the development of a versatile new product named "Poron," compounded of polyvinyl chloride, which is microporous. It is finding many applications such as shoe uppers, insoles, athletic equipment, gloves, baby pants, upholstery, raincoats, printing plates, filters and battery separators. Saul has recently been made a member of the board of directors of the **Amicon Corporation** of Cambridge, Mass., active in applied chemistry and chemical engineering.

It is with heavy heart that we record the passing of two members of the class and extend to their families the sincerest sympathy of all. **Hugh Exton McKinstry** of 115 Juniper Road, Belmont 78, Mass., died in June, 1961. A native of West Chester, Pa., he received a B.S. degree in 1917 from Haverford College, coming to Technology in our junior year. He received the master's degree with us in Course XII and was an instructor in geology at M.I.T. from 1920 to 1921. During World War I, he was a captain with the American Red Cross with the A.E.F. in France, 1917 to 1919. He later served under the Inter-Allied Commission in Berlin with the Commission for Allied Prisoners. On graduation from the Institute, he became an instructor in economic geology at Harvard, where he received his doctorate in 1926. He served as a geologist for the **Hollinger Consolidated Gold Mines**, **Timmins, Ont.**, and later went to **Melbourne, Australia**, as geologist for **Bendigo Mines, Ltd.** In 1940, he returned to the U.S.A. to become professor of geology at the University of Wisconsin and, in 1948, he was professor of geology at Harvard, where he remained until his death. He is survived by his wife, the former **Elizabeth Farwell** of Boulder, Colo.

**Daniel Edward McCarthy** of 42 Fairmount Avenue, Newton 58, Mass., died

on September 14, 1962. A native of Newton, he joined us in the freshman year. During World War I, he was an apprentice seaman in the S.N.T.C. at the Institute. He was graduated with us in Course XV. His thesis on an industrial transportation system was prepared jointly with **Odd Juell, Al Shaughnessy** and the late **Joe Hurley**. He worked for many years on highway projects and, in later years, was associated with Eastern Industries, a division of Laboratory for Electronics. He is survived by a brother, Jeremiah, of Newton, and two sisters, Cecilia McCarthy of Newton and Mrs. Edward A. Gaffey of Ogunquit, Maine.

With this start of a brand new year, your secretaries look forward with considerable interest to letters from you or from your wife, if you are too modest to tell us about those fine grandchildren! Of course, you could tell your secretary to put us on your company's public relations mailing list for all releases about you and products or activities with which you are identified.—**Carole A. Clarke**, Secretary, c/o International Electric Corporation, Route 17 and Garden State Parkway, Paramus, N.J.; **Edwin T. Steffian**, Assistant Secretary, c/o Edwin T. Steffian and Associates, 376 Boylston Street, Boston 16, Mass.

## '22

The outstanding, unreported informative item for the start of 1963 is the result of the unanimous election of new officers at our 40th Reunion: President, **Parke D. Appel**; Vice-president, New England, **C. Yardley Chittick**; Vice-president, Mid-Atlantic, **C. George Dandrow**; Vice-president, South Atlantic, **Dale D. Spoor**; Vice-president, Florida, **Francis M. Kurtz**; Vice-president, Mid-West, **Allen S. King**; Vice-president, Mountain States, **Charles E. Brokaw**; Vice-president, Pacific Coast, **Horace W. McCurdy**; Secretary, **Whitworth Ferguson**; Assistant Secretary, **Oscar H. Horovitz**; Treasurer, **Everett W. Vilett**; Assistant Treasurer, **Warren T. Ferguson**; Leadership Gifts Chairman, **Donald F. Carpenter**; Class Agent, **Warren T. Ferguson**. This may seem like a list of the previous regime, but you may rest assured they are new men because of the reinvigoration received in Swampscott. We look forward, onward, and upward to a progressive new era; we are on the move! . . . Professor **Kenneth G. Merriam** was named a fellow of the American Society of Mechanical Engineers at the dinner meeting of the Worcester section. He is a life member of the American Society of Engineering Education and an associate fellow of the Institute of Aeronautical Sciences. He was presented the Outstanding Faculty Member Award at Worcester Polytechnic Institute in 1961. . . . **Crawford H. Greenewalt** resigned as the 10th president of E. I. duPont de Nemours and Company, after holding the post for nearly 15 years. He is now chairman of the board and of the finance committee. Before assuming the presidency, he had been stationed in four manufacturing

and two auxiliary departments and had been a vice-president and a director of the company. At that time he was closely involved in maintaining liaison between the company and nuclear scientists in the government's Atomic Energy program. Crawford has been the recipient of many honors from educational institutions and from learned societies. He is the author of two books, "The Uncommon Man" and "Humming Birds." He is involved in many civic activities and is recognized as one of the most articulate exponents of the view of business on economic and social questions. . . . Your secretary appreciated hearing **Allen S. King**, President of the Northern States Power Company in Minneapolis, as he spoke to the National Electrical Contractors Assn.

**Parke Appel's** activity for the class is indicated by a brochure he enclosed showing the Wianno Club on the south shore of Cape Cod for our 49th Reunion in '67. He will have Telstar provide the entertainment from the far West. . . . **Gordon Cushman**, Sales Manager of Bethlehem Steel Company in Buffalo, has recently opened a tremendous new galvanizing mill and enlarged facilities in the Buffalo plant. He is looking for your business and recommendations. . . . **Dr. Frances H. Clark**, metallurgical consultant of the Brush Beryllium Company spoke at the Institute of Metals Division Powder Metallurgy Committee luncheon in November in New York on the subject "New Development in Powder Metallurgy for the Aero Space Age." Dr. Clark is the author of a number of publications and has been associated with many government enterprises, including a period spent as director of the metallurgical section of the President's Material Policy Commission. . . . **Bartow Van Ness, Jr.**, Chief Electrical Engineer for Pennsylvania Power and Light Company, has been appointed chief electrical-mechanical engineer for the utility. His home is on Biery's Bridge Road, Bethlehem, Pa. He is a fellow in both the American Institute of Electrical Engineers and American Society of Civil Engineers. He has also been awarded a Scroll Citation from the Edison Electric Institute's Electrical Equipment Committee. . . . Address changes have been received as follows: **John R. Haines**, Palm Harbor, Pinellas County, Fla.; **Dr. Preston Robinson**, Williamstown, Mass.; **C. Harald Sebenius**, Pasadena, Calif.; **Florence W. Stiles**, North Amherst, Mass.; **Thomas H. West**, Hopedale, Mass. . . . The sympathy of our class goes to the families of **Charles S. Smith**, Westfield, N.J.; **Aram Bashian**, Woburn, Mass.; and **Malcolm K. Sheppard** of Shaker Heights, Ohio. . . . Regards to you all—**Whitworth Ferguson**, Secretary, 333 Ellicott Street, Buffalo 3, N.Y.; **Oscar H. Horovitz**, Assistant Secretary, 33 Island Street, Boston 19, Mass.

## '23

If you have not already made your plans to attend our 40th Reunion, in June you had better get on the band wagon.

Indications are that a gala event is assured with many of your classmates planning to be there. And speaking of reunions, the item below might be of interest to you. . . . We have a special invitation from the M.I.T. Club of Mexico City to join with them in a pre-reunion warmup celebration at their 15th Annual M.I.T. Fiesta which starts on March 7 in Mexico City. Sounds like a fine idea. If you are interested get in touch with **Alvino Manzanilla**, '31, President, M.I.T. Club of Mexico City, Angel Urraza No. 1311, Mexico 12, D.F.

The following was received from our **John Burchard**, Dean of the School of Humanities and Social Science at M.I.T.: "Early in May Mrs. Burchard and I went to Greece where we spent three weeks collecting photographs of temples, drinking ouzo at night, visiting some remote Peloponnesian spots and Aegean islands as well as the conventional big ones; then to Lebanon for Baalbek, Byblos and the Cedars; then to Iran where I lectured in Tehran for U.S.I.S. and we visited hospitals and gardens in Shiraz with a side trip to magnificent Persepolis; universities and mosques in Esfahan; then to Pakistan where I lectured in Karachi, Lahore, and Peshawar, mostly on American contemporary architecture while I photographed the great Moghul stuff. Attached to this were two of the greatest weeks we have ever had, in the upper Hunza valley by jeep, pony and shoe, the domain of the Mir of Hunza who entertained us as did in Gilgit the Mir of Gupis; under the flanks of great mountains like Nanga Parbat and Rakaposhi (good weather) and later in the blander domains of the Wali of Swat and up to the much trodden Khyber Pass; then to India where most of our seven weeks were spent working in Kashmir for Dean Howard Johnson and his SIM seminar for senior Indian executives, but time for shikara rides and short expeditions to mountain places now soon to be in the news (or hopefully not); at the end a quick lecture in Madras with a chance to visit the terrific sculpture at Mahabalipuram and the temples at Kanchipuram, lectures at Bombay and Istanbul (more mosques) (and good swimming in the Black Sea, the Bosphorus and the Sea of Marmara), a short stay in Italy enjoying the earthquake at Sorrento, a longer one in Spain to wind up the study of Islamic work by visiting Granada, Seville, Cordoba and Toledo (and some other places, too, but they were not Islamic) and after a few days resting in London with side visits to Cambridge and Coventry home in time for fall term—a terrific busman's holiday."

Our past president **Jack Zimmerman** sent me the following: "Things with me are unchanged. I have seen very few '23 people in the past year or so, but I did, however, have the good fortune of flying back on a plane from Toronto with **Bob Hull** who, as you know, is head of Cities Service in Canada. He looked very well, indeed, and it was a pleasure to have this chance to chat with him. It might also be of some interest to know that our **John J. Murphy** retired as of September 1 as vice-president of the Union Carbide De-

velopment Company. Murph started with the Linde Division of Union Carbide when he left the Institute, and this makes it 39 years on the Carbide payroll. He has held many jobs of considerable importance in the corporation during this time, and was, for some time, in charge of patent affairs. He is maintaining an apartment in New York City, but will also set up a Florida residence in a new apartment in Fort Lauderdale when it is completed. He reports having had a very pleasant reunion with **Walter Dietz** at Del Rey Beach where Walt is now serving as mayor. I will give Murph about three years after he moves to Fort Lauderdale to take over the mayor's job. . . . The A.S.M.E. recently elevated **Winchester G. Blake** to the grade of fellow. Mr. Blake is an application engineer with the General Electric Company and has made pioneering contributions in the field of turbine applications. . . . **C. Arnold Dutton**, of Youngstown, N.Y., is a trustee of Niagara Community College. He is now retired from active business.

**Howard A. Lockhart**, general superintendent of the Haverhill, Mass., Gas Company is very community minded. He is a past president of the Rotary Club, director of the "Y", director of the Boy Scouts of America, director of the Red Cross and chairman of the Industrial Management Club. . . . **Julian S. Loewus** is now a retired commander and lives in Atlanta, Ga. He keeps busy raising registered Shetland ponies and is in the real estate business. As a hobby he collects stamps; he says he is a philatelist. . . . A note from **Laurence S. McLane**, plantation manager of the Peepeeked Sugar Company, Peepeeked, Hawaii, states that he would like any members of our class who visit Hawaii to get in contact with him. . . . **Walter S. Marder** is treasurer of the LA-Z-BOY Chair Company in Monroe, Mich. He was the speaker, in October, at the convention of the National Association of Furniture Manufacturers. Walt still enjoys golf and spends some time each summer at Bakers Island, Salem, Mass., where he has a summer cottage.

We are indeed sorry to report the deaths of some prominent men who were members of our class: **Eger V. Murphee**, President of the Esso Research and Engineering Company, and a Vice-president of the parent Standard Oil Company of N.J., died on October 29, of a coronary thrombosis. Mr. Murphee had a long and illustrious career and was an outstanding contributor to his company and the country. His appointment to a new post was announced in the November issue of Technology Review only a few days before his death. . . . **Louis H. Skidmore**, founder of Skidmore, Owings and Merrill died on September 27, at his home in Winter Haven, Fla. Mr. Skidmore and his firm of architects helped change the face of America. They are considered the largest group of modern architects in the country. Their work included such prize-winning structures as Lever House, Pepsi Cola, and Chase Manhattan Buildings in New York, the entire town of Oak Ridge, Tenn., and the Air Force Academy in Colorado. . . .

**Richard V. Taylor** died on October 31, in the Burbank Hospital in Fitchburg, Mass. Mr. Taylor was a native of Fitchburg and attended Holy Cross College prior to entering M.I.T. He had been employed as an electrical engineer for Jackson & Moreland Company for the past 17 years. . . . **Beverly M. Brown** died on August 9, in Philadelphia, Pa.; we have no further details.

We wish to announce the following address changes: **Charles T. Burke**, 76 Spruce Street, Watertown 72, Mass.; **Russell E. Collins**, 2403 Moray Avenue, San Pedro, Calif.; **Miss Myrna S. Howe**, 2157 North Minoro Drive, Altadena, Calif.; **Richard W. Lambrecht**, 546 Lincoln Road, Grosse Pointe 30, Mich.; **Max Maltzman**, Apt. 103, 1260 Havenhurst Drive, Los Angeles 46, Calif.; **Lockwood Oliver**, 1 High Street, Hudson, Ohio; **Leslie W. Powers**, 29B Kenville Road, Buffalo 15, N.Y.; **Henry Y. Satterlee**, Cannon Electric Company, 666 East Dyer Road, Santa Ana, Calif.; **Charles Shilowitz**, 39 Duncan Avenue, Jersey City 6, N.J.; **Chaplin Tyler**, 3209 Swarthmore Road, Wilmington 6, Del.—**Herbert L. Hayden**, Secretary, E. I. duPont de Nemours and Company, Leominster, Mass.; **Albert S. Redway**, Assistant Secretary, 47 Deepwood Drive, Hamden 17, Conn.

## '24

A Happy New Year to you all. 1963. The 43rd anniversary of the birth of our class, the 39th year since most of us left the Institute's hallowed halls. One more year to go before our 40-Year Reunion. It will be a big one, so plan now to arrange things so you can be there. . . . One of the most interesting events of the fall occurred because of the induction of the 95th M.I.T. Club. In appropriate ceremonies held simultaneously in Cambridge and Bangkok, the M.I.T. Club of Thailand was officially inducted. Representing the new club at the Alumni Council meeting in Cambridge was **Luang Videt-Yontrakich**, Student Counselor at the Thai embassy in Washington. Videt was here for three days visiting various people, meeting with students, and attending dinners. It was very pleasant to have him back again. . . . During the course of conversation the name of **Kaare Aass** came up. He has a daughter who is a physiotherapist, and wants to come here from Norway to work. Kaare had written your secretary for a bit of help and, not dreaming his name would mean anything, I mentioned it to Videt. Lo and behold, they had been roommates (or was it tentmates?) at East Machias Summer Camp. Now there will be a bit of long-delayed correspondence.

Haven't heard from **Bill Giddon** in ages, but now comes a note, actually a P.S. on a letter about other matters, stating simply: "Returned last month from Trip Number 5 to Europe. Trip Number 3 was a globe circler through Australia and Japan." Do hope in the future Bill, and all the rest of you long

distance travelers, will keep your secretary better informed. Bill, as you may remember, is in the shoe business (Sandler of Boston). What was he doing in Australia? Dickering for kangaroo hides? And was he getting new ideas on split-toe clogs in Japan? He evidently got some good ideas somewhere, because he recently was honored with one of the five American Shoe Designer Awards presented for the first time by the Leather Industries of America. . . . There is also news of another of your classmates whose name has been noticeable in these columns by its absence. On September 17 **Hal duPont** was awarded an honorary doctor of letters degree by the University of Delaware. The announcement gave a brief summary of what Hal's been up to lately: "S. Hallock duPont, a graduate of the Hill School and an alumnus of M.I.T., has long been interested in youth activities, education and research, particularly in the field of livestock improvement. His benefactions include the establishment of an endowed chair in animal husbandry teaching and research and the provision of funds for expanded research in the university's school of agriculture. A director of both the Longwood and Eleutherian Mills-Hagley Foundations, he is widely known for his assistance to Delaware youth. In 1954, he gave a 20-acre tract of land near Newark as a site for the annual Pushmobile Derby sponsored by the Delaware Association of Police. He also provided land for the Newark Chapter of the Future Farmers of America so that local high school students could apply farming techniques learned in vocational agriculture courses. In 1955 he gave a 95-acre tract of woods and farm land bordering Mill Creek to the Boys' Club of Wilmington to permit an expansion of the club's outdoor activities program. Last year he received widespread public acclaim when he established a trust fund to provide a permanent lifetime income for World War I hero, Sergeant Alvin York."

It is with deep sorrow that we report the death of **Joseph Michael Naughton**, President of the Second National Bank of Cumberland, Md. Joe was 63. He was with us for three years after transferring from the University of Rochester. He had worked for Eastman Kodak, Eli Lilly and Company, and the Eaton Paper Corporation, before going into the banking business. Recently he had been chairman of the executive committee of the American Bankers Association's Trust Division and Uniform Tax Committee. . . . That's it for now.—**Henry B. Kane**, Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

## '25

There is a great dearth of information regarding 1925 activities this month; and if members of the class do not get themselves in the news, or write the secretary, he is in no position to keep the name of the class in the news each month. . . . A recent IBM release indi-



cates that Dr. **Arthur L. Samuel** has been named editor of the "IBM Journal of Research and Development," a quarterly scientific journal which has been published since 1957. Following his graduation from M.I.T., Dr. Samuel spent two years as an instructor at the Institute, and then joined Bell Telephone Laboratories in 1928, where for 18 years he was engaged in research and development on electron tubes and vacuum tubes at ultrahigh frequencies. In 1947 he was appointed expert consultant to the office of the Secretary of War and has been chairman of the Advisory Group on Electronic Devices of the office of the director of Defense Research and Engineering. He joined IBM in 1949, and since April, 1961, he has been Director of Research Communications at the IBM Thomas J. Watson Research Center in Yorktown, N.Y.

**Edward H. deConingh** for many years has been one of Cleveland's civic leaders. He is currently the campaign chairman of the 1962 United Appeal of Cleveland, is a member of the board of the Greater Cleveland Associated Foundation, and a former president of the Welfare Federation of Cleveland. He is also active in a number of local health and welfare agencies. Most recently he has been elected to the board of trustees of Western Reserve University. He is also a member of the University's board of governors, and is chairman of the Visiting Committee of Cleveland College. Of course, his participation in all of these worthwhile endeavors is in addition to his principal responsibility as partner and chief engineer of the Mueller Electric Company of Cleveland. . . . A review of the roster of M.I.T.'s Departmental Visiting Committees for 1962-63 shows that **Sam Spiker** is an alumni representative on the Visiting Committee for the Department of Humanities; and **Bill Asbury** continues as a member of the Visiting Committee for Sponsored Research.—**F. L. Foster**, Secretary, Room 5-105, M.I.T., Cambridge 39, Mass.

## '26

It's January in November—at least for purposes of meeting the Class News deadline. To be specific we are at Piggy Cove on the holiday, November 11. It was howling 40-50 miles per hour northwest when we arrived yesterday but northwest wind here is a good omen. It has cleared and the sea sparkles this morning with still enough stiff breeze to carry spindrift from the breaking waves. We mentioned in a recent issue that quite frequently we meet members of other classes who read the '26 notes. After that comment we received the following letter. "Dear George: You speak of being surprised when you hear of other than '26s reading your column. I've been reading it for years and find it extremely interesting. My wife's grandfather, John M. Way, built a fine mansion at Folly Cove and constructed that big granite wall and people called it

John Way's Folly. Maybe that is where it got its name. When my children were small we usually had an annual picnic at Folly Cove. I think it is in a marvelous place. Andy Fisher, '05." I have written Andy and we hope he will continue reading our notes. We also mentioned that the Class News of many colleges consists of nothing more than address changes, births and deaths. We receive the address changes regularly from the Alumni Office but seldom have occasion to use them.

Having accumulated a number of the address changes, we have some that are interesting enough to report even if they leave an unanswered question. Here's one on **Charles E. Poore**, who is listed with Extra Blanc Cements, Inc., Winter Park, Fla. We wonder if Charlie is aware that one **Raymond Mancha** lives at 1340 Grove Terrace in the same town? Here is one to draw a chuckle. Lieutenant Colonel **Arthur C. Fuller**'s new address is 6252 Adobe Road, San Diego, Calif., but in a little box at the bottom is written "change from master sergeant." . . . A few other address changes that indicate major moves (even though unexplained) are **Philip M. Hulme** from Murray Hill, N.J., to Mayer, Ariz. . . . **Mrs. Clair E. Turner** from Arlington, Mass., to Geneva, Switzerland. . . . After years of having no word whatsoever from **Jim Carey** we at least have an address change but still in the same area—now in East Lansdowne, Pa.

A clipping from the Grand Rapids, Mich., Press tells of the activities of a classmate we have not heard from for a long time. We quote. "A 'veteran' of the missile age, **James L. Suydam** has joined the Owen-Ames-Kimball Company as general superintendent of construction. Suydam comes here after six years of construction work on space age installations in Alabama, Florida, Wyoming, the District of Columbia, Massachusetts, Virginia and Michigan. His work involved \$100 million in construction, including a Saturn launching pad at Cape Canaveral, an Atlas launching complex at Cheyenne, Wyo., and several buildings at Redstone Arsenal, Huntsville, Ala.; he earlier was associated with skyscraper construction in New York City and Cincinnati." A photograph at the top of the article indicates that Jim has personally thrived on all this activity. He looks as though he was about ready to attend his 20th Reunion. Our classmate, **Jim Killian**, is of course often in the headlines but recently hit them for personal reasons. He was very ill in a Boston hospital. His illness required surgery and both **Pink Salmon** and I were out of town for several days at the time. However, at a recent Alumni Council meeting we learned that Jim's recuperation had reached the stage where his hospital room had become an active office and dictated memos were already coming from there like a barrage. Best wishes from the class, Jim. . . . The notes for January will have to come to an abrupt end. A local stone worker has just arrived to repair our terrace and the hammering is drowning out my in-

spiration. Also it's such a beautiful day here by the sea I want to get out and absorb some of it. Let us hear from YOU! Cheerio until February.—**George W. Smith**, Secretary, c/o E. I. duPont de Nemours and Company, 140 Federal Street, Boston 10, Mass.

## '27

The annual report of the 1962 M.I.T. Alumni Fund was of interest. In the year ending June 30, 171 or 30 per cent of 580 active 1927 class members made a total contribution of \$8,799, an average of \$52 per contributor. From 1940-1962, inclusive, benefactions received by M.I.T. from our class (including contributions to the Alumni Fund) total \$377,264, of which \$44,074 was given in the period from July 1, 1961, to June 30, 1962. **Dwight Arnold** is a member of the 1962 Alumni Fund Board, and **Dick Hawkins** and **Glenn Jackson** are our class agents. . . . **Karel Jan (Charlie) Bossart** has been called "the father of the Atlas," the free world's first intercontinental ballistic missile. Belgian-born, and technical director of the Astronautics Division of General Dynamics, he holds an aeronautical engineer's degree from M.I.T., and has been working on rocket projects since the end of World War II. A write-up of his work, which appeared in a recent issue of Newsweek magazine, indicates that he now devotes most of his laboratory time to developing the Nova rocket, which should give the U.S. booster power to land heavy payloads on the moon by 1970. . . . **Bill Taggart** is now a term member of the M.I.T. Corporation.

Every once in a while the Alumni Office tells us to "remove completely" certain names from our files. We questioned them about this and they wrote us the following in explanation: "Usually such a person attended M.I.T. for a short time only (perhaps a summer session) and requests that his name be removed. This is also done if mail is returned consistently from a man who was a student here for just a short time. No one who has received a degree from M.I.T. at any time is ever removed from the files." Last month we removed the following names: Mr. Marion H. Brandt, Mrs. Katharine Maynard and Bertram B. Smith. . . . The following new addresses have been received: **F. Sidney Badger, Jr.**, 5200 Armida Drive, Woodland Hills, Calif.; **B. Allison Gillies**, Jones and Gillies, Box 625, Rancho Santa Fe, Calif.; **Abraham Mankowich**, 302 North Franklin Street, Bel Air, Md.; **Edward E. Mott**, 9 Majestic Avenue, Lincroft, N.J.; and **Leland D. Webb**, 2000 Cerco Alta Drive, Monterey Park, Calif.—**J. S. Harris**, Secretary, Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

## '28

Those of you who read "Business Week" saw the picture of our prominent and successful classmate, **Richard Roth**,

IV, on the cover of the September 1, 1962, issue. The interesting story of Dick's company was given in three full pages of text and photographs. Emery Roth and Sons is a New York firm of architectural engineers who, since the war, have designed some 60 Manhattan office buildings, 35 apartment buildings in the city, Bronx High School of Science, and numerous office, apartment, and public buildings in outside areas. The story of Dick's contribution, participation and success in this tremendous work is something that leaves us with a warm sense of pride. . . . News clippings from the **Berkshire Eagle**, Pittsfield, Mass., and the Union of Springfield, Mass., both dated August 11, 1962, tell of the appointment of **Max I. Alimansky** to the post of manager of the newly organized Advance Technical Work Operation of the Transformer Division of General Electric Company in Pittsfield. Max began his career with G.E. while he was yet a student at the Institute. His entire professional life has been devoted to this company. He has progressed over the years from engineer in the capacitor section to his most recent position of general manager of the distribution transformer department's high-voltage specialty transformer section at Holyoke, Mass. The Alimanskys have two sons: Mark, following in dad's tracks, graduated in Course VI and is an engineer for G.E. at Syracuse, N.Y. Son Burt is in his third year at Dartmouth.

**Allan Tarr** is one we had not heard from in a very long time. Your assistant secretary had the good fortune to meet Allan at a recent meeting of the Materials Science Division of ASTM. Allan explained that his professional life has been in three phases: The first, lasting 10 years, consisted of work in colleges—two years in the Department of Mining and Metallurgy at the Institute followed by eight years at Cooper Union, where he was in charge of metallurgical instruction. The second phase consisted of work in industry and included four years with Standard Oil Development Company as a metallurgical engineer, two years with Basic Magnesium, Inc., and three and a half years with Revere Copper and Brass Company as supervisor of research in the physical and mechanical metallurgy of magnesium. The third phase, still in progress, has Allan as a consultant to the Army. Ten years of this was as consultant to the Corps of Army Engineers. For the past four years, Allan has been with the Office, Chief of Research and Development, as research director. Allan was married to Gloria Stevens of Reading, Mass., in 1930. Their son, Davis, graduated from the U.S. Military Academy in 1960 and is now a first lieutenant, U.S. Air Force. He has completed his requirements for his M.S. degree at the University of Illinois. Davis' wife, Linda, is a graduate of Johns Hopkins in Nursing Science. Daughter Valerie is also a graduate of Johns Hopkins in Nursing Science. She is taking special studies at University of Virginia and expects to be married this year to Captain Joseph Wise. Allan and Gloria spent seven weeks in Europe during 1960 in connection with

government work. They visited Germany, France, Holland, Belgium, and England.

By the time you are reading these notes, it will be January and high time to be forming your plans to be at the 35th Reunion, Wychmere Harbor Club, Harwichport, Mass., June 7, 8, and 9. This spot is on the south side of Cape Cod, where it is pleasantly warm in June. If you have been to earlier reunions, be assured that this one will match any in food, fun, pleasure, and fellowship. If you have not attended one before, then give yourself and wife a treat. Send in your reservations for a wonderful weekend! . . . With regret, we must record the passing of another classmate. **John E. Linebaugh** died on February 24, 1962. His last address was Point Comfort, Otsego Lake, Gaylord, Mich.—**Walter J. Smith**, Assistant Secretary, 15 Acorn Park, Cambridge, Mass.; **George I. Chatfield**, Secretary, 11 Winfield Avenue, Harrison, N.Y.

## '30

In the course of a recent trip to Washington, I stopped in to see **Jim Keely**, who is a member of the Board of Appeals of the Patent Office. Because of space limitations in the Commerce Building, the Board of Appeals has been moved to 1801 K Street where Jim has an impressively large and comfortable office. Most of the appeals that Jim hears deal with patent applications in the electrical field. By pooling our information we discovered that there are at least a dozen members of the class operating in the patent field, including three patent examiners, four members of corporate patent departments and three attorneys in private practice. . . . This month there is an item for the odd-coincidence department. Constant readers of the notes will recall a reference in the June issue to a Japanese summerhouse designed by **George K. Nakashima** and installed in Grand Central Station to promote the sale of Kikkoman soy sauce. In connection with the Educational Council work, I had occasion to talk last spring with a young man by the name of Yoshiharu Morawaki, who entered M.I.T. last September. These superficially unrelated events were connected up by a recent article in our local paper. It seems that Yoshi's father is the New York sales representative for Kikkoman and Yoshi's mother was one of the pretty Japanese ladies referred to in the June notes. . . . The news yield from the information forms I send out each month seems to be diminishing steadily. May I suggest that this is an area in which brevity and restraint are not necessarily virtuous?

The four items from this source are as follows: **Vic Janone** has moved to Chula Vista, Calif., where he is a design engineer with Rohr Aircraft Antenna Division, designing drive systems for large antennas used in deep space satellite communication. . . . After receiving his M.S. in E.E. at M.I.T., "**Dolph**" **Hugin** went on to obtain an LL.B. at George-

town and an LL.M. at Harvard. He is currently practicing patent law in Washington. . . . **Langley W. Isom** is divisional sales manager of Reeves Bros., Inc., manufacturers of synthetic coated industrial fabrics. He has two married daughters and six-plus grandchildren. . . . As a postscript to last month's item about **Ed Jenkins**, since his retirement from Johns-Manville, Ed has been doing consulting work in the building materials field. . . . Changes of address include: **Albert F. Bird**, 61530 Mound Road, Washington, Mich.; **Robert M. Jacobs**, 2 Lexington Avenue, Lexington 73, Mass.; **Vito Janone**, P.O. Box 1377, Chula Vista, Calif.; **Paul R. Konz**, 110 South Orange Avenue, Livingston, N.J.; **Hayward K. Mann**, 454 Middlesex Street, Waltham 54, Mass.; **Horace B. Preble**, 279 Woodstown Road, Salem, N.J.; **John M. Weaver**, W. 520-16th Avenue, Spokane 41, Wash.—**Gordon K. Lister**, Secretary, 530 Fifth Avenue, New York 36, N.Y.; **Ralph W. Peters**, Assistant Secretary, 249 Hollywood Avenue, Rochester, N.Y.; **Louise Hall**, Assistant Secretary, Box 6636, College Station, Durham, N.C.

## '31

A clipping from the Mercury in Medford, Mass., tells that **Henry Ahlberg** has been appointed assistant to the president of Commercial Filters. He was formerly plant manager in Melrose, and his new responsibilities will be in the areas of company acquisition, plant moves and consolidations, new plant facilities in this country and abroad, analysis and evaluation of new manufacturing processes, executive recruitment and negotiation with the Melrose plant union. . . . Through the grapevine, I hear that **John Harrison** and **John MacBrayne** are thriving in the Woolworth Building in New York but as yet we haven't gotten together. Word from the Alumni Register tells that **Robert M. Sprague** passed away on March 6, 1962. New addresses received since the last notes are as follows: **Edward F. Coy**, Coy Coffay and Associates, Inc., 1500 Mass Avenue, N. W., Washington 5, D. C.; **Donald L. Girard**, 1305 Bath Street, Santa Barbara, Calif.; Mrs. **Mary M. Handrahan**, 4 Ajax Place, Berkeley 8, Calif.; **Arthur N. Lappin**, 84 Windermere Boulevard, Buffalo 26, N. Y.; **Edward R. Toporeck**, Box 5116, Santa Barbara, Calif.; **R. Cameron Whitney**, 5140-13th Avenue South, Gulfport 7, Fla.; and **William H. Williams**, 1608 Larcoe Way, Glendale 2, Calif.—**Edwin S. Worden**, Secretary, 35 Minute Man Hill, Westport, Conn.; **Gordon Speedie**, Assistant Secretary, 90 Falmouth Road, Arlington, Mass.

## '32

You are reading these notes after the holiday season of 1962 and at the beginning of the new and vigorous year of 1963. They are being written early in

November and since class news is sparse it appears more appropriate for a New Year's issue to write a few lines to stimulate a self-organization of total membership of the Class of '32. The fact that only 25 per cent of the total class membership have read these notes in the past year is of primary concern. This is because only this percentage of the class received The Technology Review through making a current contribution to the Alumni Fund. It is a frustrating situation for a class secretary to be unable, through these notes, to reach 75 per cent of the class. I am requesting your help in doing something about it. The entire class membership of 696 received the first solicitation for the 1963 Alumni Fund from your class agents **William B. Pearce** and **George W. Falk** early in November. A later mailing to the entire class went out early in December, and there is more to come. The story of M.I.T. today and of the advantages of being an active participant in M.I.T.'s impressive progress is now before every graduate. This is the time for you to pick up your phone and call some of those old friends from the Class of '32. Keep on calling until you find one who does not now receive The Review and convince him to join up. The class agent and Alumni Fund organizations will take over from there. The total amount contributed by the class may be their job, but the total number of participants in class activities is everyone's job. We all have the future class plans to formulate—for the 35th Reunion, for possible intermediate reunions, for preparation of a new Class Report—and it is difficult to exchange ideas through these pages with such a large portion of the audience arriving late and so few heckling the speaker. Since The Review will be sent to each new subscriber immediately upon receiving his contribution, we can have a packed house by summer. But, remember that 75 per cent are not reading this issue and may not be in the audience unless you make those telephone calls. I can supply addresses if you drop me a note asking "Where's —?" And add a few lines of information for these notes.—**Elwood W. Schafer**, Secretary, Room 10-318, Ext. 621, M.I.T., Cambridge 39, Mass.

# '33

May the new year be rewarding and satisfying for each of you, whether you seek good health, a low golf score, all A's for your college youngsters, or whatever. **Ed Goodridge**, Chairman of our 30th Reunion, reports that **George Ropes** and **Mal Fleming** are assisting in the planning. Says Ed, "Our 25th was an outstanding event. I recall seeing several wives with tears in their eyes when we parted. It was amazing to me how quickly the wives and husbands became so friendly and sociable, like one big happy family." Ed would welcome volunteers from other parts of the country to help in assuring the kind of attendance the occasion merits. . . . Congratulations to **T. Gorman Byrne**, who was recently pro-

moted to Captain, U.S.N. . . . In the news: **Emile Bustani** is described by the 'Monitor' as "probably the single biggest and most influential businessman in the Middle East," in reporting the third Arab Petroleum Congress in Alexandria. Emile takes issue boldly with Russian attempts to sell oil at low prices to shake the economics of the Arab world. Characterizing him as "short, chunky and full of bounce," the 'Monitor' refers to him as "a modern David out of Lebanon." . . . **Gilbert W. King**, IBM Director of Research, recently joined the Science Advisory Board of the Air Force. . . . **Lynn Williams**, President of Anocut Engineering in Chicago, has an interesting avocation as chairman of the Great Books Foundation. . . . Hats off to **Athel Spilhaus**, whose science exhibit at the Seattle Fair now has permanent status. . . . Some months ago **Omar Somers** acquired a color printing plant in Brookline, leaving his post at Raytheon.

**Herb Grier**, reporting through **George Henning**, sends interesting news from Las Vegas, where he heads the western activities of E.G. and G. in nuclear test site activities and instrumentation of rocket engines. . . . **C. T. (Newt) Newton** should write a book on his stay in Cambodia. Says Newt, "It was truly a personally rewarding experience to participate in giving a hand to a proud small race of people determined to maintain their national sovereignty so recently won. They are a cheerful, rugged, resourceful people who can apply themselves energetically, when they become convinced the effort is worthwhile! And they have applied themselves, particularly in the area of providing almost country-wide elementary education."—**R. M. Kimball**, Room 7-206, M.I.T., Cambridge 39, Mass.

# '34

It is with the deepest regret that we take note of the recent loss of two of our classmates. **William Robert Tomlinson, Jr.**, died in late September at Fairfax, Va. He had been suffering for some time with a heart condition and had undergone three operations in the previous six months. Since 1957 he had been an analyst in the Operational Logistics Division of the Research Analysis Corporation in Bethesda, Md. A number of his articles were published in technical journals on such subjects as kinetics, organic chemistry and explosives. His wife, Muriel, and a daughter, Shirley Ann, survive him at home. A son, Glen Alan, lives in Annapolis, Md. . . . **Ed Nowell** died on November 2 after a long illness with a liver virus. An avid fisherman, and an even more avid salesman, he was struck down and confined to bed in the summer of 1961. He was with the Procter and Gamble Distributing Company in Boston. Surviving him at home are his wife, Roberta, and three children, Hannah, Grant and Samuel.

Vickers Incorporated (a division of Sperry Rand) has announced the appointment of **Ed Asch** as marketing man-

ager at the European division headquarters in Lausanne, Switzerland. He has been with Vickers over 20 years and was promoted from his most recent position as operations manager, International Division. . . . **Art Conn** has become co-ordinator for development and administration in the Research and Development Department of the American Oil Company at Whiting, Ind. He had been director of process development and has held various other positions on the staff for the past 23 years. After graduation in 1934, Art stayed on at Tech to get his master's degree in chemical engineering. He and his family are living at 7450 Euclid Parkway, Chicago 49, Ill.

Our peripatetic class president **Hank Backenstoss** was reported in the November Review to be back in the United States following his assignment at the American University in Beirut, Lebanon. This had been true indeed but before November actually arrived he and Nicky had returned to the Near East, this time to Saudi Arabia. Hank is a party to a contract with the government of Saudi Arabia to undertake a comprehensive survey of that country's power facilities and power requirements. Charlotte and I were delighted to have a two-hour luncheon date with both Hank and Nicky as they passed through New York just prior to their overseas departure. I feel inadequate to relate the many fascinating stories they tell of their experiences. I only hope Hank makes definite plans to be in the States in June, 1964, so that they can share the pleasure of our 30th Reunion and give first hand accounts of their adventures. . . . **Bill Milliken** has broken into print again, this time as co-author of an article entitled, "Control Response Requirements" in the September issue of "Aerospace Engineering" magazine. He is now director, Full Scale Division of Cornell Aeronautical Laboratory, Inc., which he joined in 1946. Graduating with an S.B. in mathematics he quickly turned to the aeronautical field and has conducted and directed programs in airplane stability and control research as well as research on a variety of other vehicle types. In fact his interest in automobile performance and control has even involved active participation in competitive racing with the Sports Car Club of America. He has driven racing cars at Watkins Glen and at Sebring, Fla.

In September **J. Godfrey Borger** was the main speaker on the program at a flight transportation seminar at M.I.T. He is chief project engineer for Pan American Airways with offices in Long Island City, N.Y. . . . I have just returned from a pleasant Florida vacation during which I studiously avoided reading New York newspapers. I was consequently most grateful to **Jim Eder** for sending me a clipping about **Hoyt Steele** from the "New York Times" of October 22. Hoyt has been named a vice-president of the General Electric Company. Although he has only been with General Electric since 1958, he has been in charge of their government relations program and more recently has been manager of the company's anti-trust settle-



ment and litigation operation. His office is in New York City and his home is in New Canaan, Conn.—**G. K. Crosby**, Secretary, 44 Deepwood Road, Darien, Conn.; **H. E. Thayer**, Secretary, 415 W. Jackson Road, Webster Groves 19, Mo.; **Malcolm S. Stevens**, Secretary, 9 Glenfield Road, Barrington, R.I.; **J. P. Eder**, Secretary, 1 Lockwood Road, Riverside, Conn.

## '35

Hail to the champ! **Bill Barker** is the holder of the President's Cup and 1962 winner of the annual class golf tournament. It was a tight match, refereed personally by your secretary; **Bob Forster** almost tied it up on the 18th green when his putt rimmed the cup instead of dropping in. For the record, Bill won the match one up. . . . **Jack Colby** has been in communication with **Leo Beckwith** about plans for our 30th Reunion, which will be coming up faster than we think. Jack plans to be in the Boston area over Thanksgiving with his wife's family and visiting his two sons, who are at school here. The class Steering Committee will be meeting with Jack on Friday noon, the 23rd, at the Smith House to discuss details, and we should have some tentative plans for next month's notes. . . . **Henry King**, our class agent for the Alumni Fund, reports that 149 of our class gave \$8,119 in the 1962 fund year. This represents only 24 per cent of our class roll of 635. However, our total class gift of \$641,656 is the second largest college gift ever reported by a single class in a five-year period. We were only out-distanced by the Class of 1922, which came up with a total of \$738,000.

District Secretary, **Mort Jenkins**, moved from Sewickley, Pa., to the Cincinnati area in early May. He is now manager of alloy sales with the Acme-Newport Steel Company, Division of Acme Steel Company. His address is P. O. Box 52, Newport, Ky. . . . **George Agnew** has moved from Torrance, Calif., to 4140 Via Nivel, Palos Verdes Estates, Calif. . . . **David Buckwalter** is now located at 109 11th Avenue, Salt Lake City 3, Utah, relocated from Peru. . . . **George Forsburg**, now at 78 Clisby Avenue, Dedham, Mass., is formerly of Roslindale, Mass. . . . **Peter Grant's** home address is New Ireland Road, R.F.D. 5, Binghamton, N. Y. . . . Miss **Elizabeth Haskins** is now living at 15 Hawes Street, Fitchburg, Mass. She teaches at the Fitchburg State Teachers' College. . . . **Joseph Raes** is now living at 23721 Clarendon Street, Woodland Hills, Calif.; he formerly lived in North Hollywood. . . . **Anthony Lowell** is now located at the Communicable Disease Center, 1600 Clifton Road, Atlanta 22, Ga. Anthony was formerly located at New York City.

**Ned Collins**, our regional secretary from Chicago, just got under the wire with the following very interesting letter: "I received your memo and S.O.S. request for news. Coincidentally, a few days before I had sent a circular letter to all the names you furnished me, asking

for news for you. I called **Charlie Debes**, VI, who, as you know, has his own engineering and architectural firm, Charles N. Debes and Associates, Inc., 915 East State Street, Rockford, Ill. His report was very interesting and represents a well deserved personal triumph, considering the obstacles he had to overcome. He has now completed 75 per cent of the construction of a 168-bed Skilled Care Nursing Home in Rockford. As a memorial to his grandmother, the home will be known as the Alma Nelson Manor, and the opening is set for February, 1963. Another outstanding first of his is a 20-story building for the elderly, also located in Rockford. Construction is now underway on what will soon be the tallest building in the entire state of Illinois outside of Chicago. It appears that Charlie's pioneering in the field of geriatric care will not only establish him as a leader in the field, but will also bring great publicity to Rockford as a center for low cost geriatric medical facilities.

"He reports that his three daughters are so involved in high school and class activities that Mrs. Debes 'is operating a taxicab service for the children, most of the time.' His oldest child, Mary Brent, has the lead in the high school play 'Oklahoma'; Sherrill, the next in line, is playing the violin in the orchestra of another high school play, 'The Music Man'; while his youngest is preparing to be a future performer by studying music and taking piano lessons. Between their family and business activities, I'm sure both Charlie and his wife have little time for loafing. As the saying goes, it couldn't happen to a nicer guy, and I'm certain he will become even more prominent in the future." Many thanks, Ned, for your fine addition to the Class News this month.

**Art Haskins** not only wrote me the following letter but also wrote to **Jeff Farmer**, who in turn came through with a very interesting letter; both of these follow: From Art, "After a year of silence, here's a bit of news from the North Country. First, a real newsy letter from Jeff Farmer, Course II, is enclosed. To bring you up-to-date on A. L. H. and family, Daniel P., Univ. of N. H., '59, M.I.T., '61, is now assistant professor of mechanical engineering at Franklin Institute, Boston; Carolyn L., Gorham State Teachers' College, '62, is teaching fourth grade in Kittery, N.H. Dan has his own sailboat now and proceeded to trim the old man in the races this summer. Carol jumped ship and went to Europe with the Bates College crowd for the summer. "I spent the summer sailing, building a stone wall, and repping my heating system. Belay! The real accomplishments are yours and Doreen's. Mucho congratulations, and may Melissa be a chin off the old blockette."

Jeff Farmer wrote to Art as follows: "It would be rather hard to ignore that stamped envelope you sent since you addressed it to yourself; I guess I will have to use it for the purpose you sent it for instead of some other job. I have read with interest many doings in the Class News and I want to say that I have sent in news when there was any. Since I came to Woodland in 1956, I have sent in

a bit now and then but there really hasn't been much. To answer one question, I am writing on office stationery. The second question is probably what does the title mean. (Secretary's Note: Jeff is Assistant Manager—Services, St. Croix Paper Company, Woodland, Maine.) I have charge of steam, power, maintenance, engineering, and a few other odd jobs that are classed among services to our production organization. Up until this month, we were a one plant integrated newsprint mill that took it from the tree to the press room, but we now find ourselves about to be merged with Georgia Pacific Corporation. What that will bring remains to be seen, but most of us feel that it will be good. My main mission right now is to replace my mechanical superintendent, who resigned last August, while keeping things going with a master mechanic in the hospital. Recruiting is pretty tough for a mill located as far down east as we are, unless by chance he likes to hunt and fish, then no one can top us for attraction.

"As of this writing, I haven't dug out the skis and headed for Sugarloaf Mountain, even though we did catch a few inches of snow a week ago. However, it won't be long now. The big thing in our household at present is that son, Clint, entered the U. S. Naval Academy at Annapolis this year, to realize an ambition he has had since he was 8 years old, and without any prodding from his parents. From all reports, he is completely happy with his selection of a college. The next major event in the family will be a grandchild due near Christmas. As I have noted previously, daughter, Cynthia, married a Course II boy, '59, who is now in his second year at Harvard Business School after having worked a couple of years for Westinghouse. You speak of stories from India. That was a long time ago, and besides I could get wound up pretty well. Those war stories were fairly accurate for a while, but after 17 years, they get blown all out of proportion.

"Looking into the more recent past, Christine and I had a very wonderful two weeks in Bermuda last March, at the Elbow Beach Surf Club. We recommend that as a vacation any time. Yes, we brought back the usual gallon tax free. Anytime a '35er sees fit to tour Canada and plans to enter through New Brunswick Province, I hope he will say 'hello' on the way by. We look out our front door across the St. Croix River into Canada, and you can't go much further east and stay in the United States. Besides, when touring in Maine, one shouldn't leave without a visit to a paper mill. Best wishes, Art, and thanks for the nice letter. I hope this dope will be useful even though it is far from glamorous." Many thanks to you, Art, for your assistance and many thanks, through this column, to Jeff Farmer for his interesting news. . . . I have just recently learned that I will not retain **Jack Orchard's** plaque for very long as **Jerry Golden** is expecting an addition to his family in March. I hope that in the next 30 days, I will be hearing from others of the regional and district secretaries, who can contribute interesting news and letters to

keep this column moving.—**Allan Q. Mowatt**, Secretary, 11 Castle Road, Lexington 73, Mass.; Regional Secretaries: **Edward C. Edgar**, Kerry Lane, Chappaqua, N.Y.; **Hal L. Bemis**, 510 Avonwood Road, Haverford, Pa.; **Edward J. Collins**, 904 Merchandise Mart, Chicago 54, Ill.; **Gerald C. Rich**, 105 Pasatiempo Drive, Santa Cruz, Calif.

## '36

Somewhat tardily we report that the Reverend **Edward A. Cahill** was installed as minister of the First Unitarian Church of Pittsburgh, Pa., on January 7, 1962. Ed moved to the steel city from the United Liberal Church of Atlanta, Ga. . . . Also, we report belatedly, the death of **Milton Silverman** of Menlo Park, Calif., last February. We regret that we have no further information at this time. . . . Members of the class continue to pull up stakes and move in every direction. **Howard L. Anderson, Jr.** is located at 511 Lancaster Drive, San Diego 20, Calif.—quite a distance from Gary, Ind. . . . Prexy **Jack Austin**, in New York since 1958, may now be found (maybe) at Time, Inc., 221 North La Salle Street, Chicago 1, Ill. . . . **John J. Hanagan** has moved from Hoxie, R.I., to Allen Park, Mich. (7189 Buckingham Street) and **Felix Klock** gives his new home address as 33 Natchaug Drive, Glastonbury, Conn. . . . **William T. Royce** is now receiving mail at 2600 Anchorage, San Pedro, Calif. . . . **Ieu-Liang Wu** had no address listed in the 1961 Alumni Register. It is now 140 Pelham Road, New Rochelle, N.Y. He has added "William" to his name and should now be listed as William I. L. Wu. . . . The Alumni Office reports that **Bill Greenwood's** address is Indian Hill Street, West Newbury, Mass. He has lived there for some time but in case you hadn't caught up with it, I pass the information along. . . . Best wishes for the New Year to you all and please include a note to me with your New Year's Resolutions!—**Alice H. Kimball**, Secretary, 20 Everett Avenue, Winchester, Mass.

## '37

**Henry Blackstone**, President, Servo Corporation of America, recently was a guest lecturer on the College of the Air production; he spoke on "The American Economy." . . . **Al Reinhardt** has been named chief project engineer of the space life support systems at the Hamilton-Standard Division, United Aircraft Corporation, Hartford, Conn. Al has been with the company since 1952 and was formerly a development engineer. . . . **Dave Summerfield** presented a paper at the Electrical Insulation Conference at Washington, D.C. on "Insulation Evaluation Techniques for Motors Used on Heavy Duty Portable Tools." He spent two weeks this summer in Holland working with a Dutch subsidiary on motor problems.—**Robert H. Thorson**, Secre-

tary, 506 Riverside Avenue, Medford, Mass.; Professor **S. Curtis Powell**, Assistant Secretary, Room 5-323, M.I.T., Cambridge 39, Mass.; **Jerome Salny**, Assistant Secretary, Egbert Hill, Morristown, N.J.

## '39

The kick-off spot for this month is reserved for the distaff side, for we're fortunate in having at hand one of the rare news items about women '39ers in action: Dr. **Domina Eberle Spencer**, VIII. Our source is the News, of Dallas, where Domina visited in September as one of the speakers for the national technical conference of the Illuminating Engineering Society. According to the News item, Dr. Spencer has contributed to the field of lighting the "aperture lamp," made by Sylvania at her suggestion, which provides a great deal of light—flooding a runway or a highway—with no more power than other types in use and with no glare. The chief use so far of the aperture lamp has been in the Washington National Airport, and at the Panama Canal where the lights make it possible to use areas of the canal previously navigable only by daylight. And it has been installed in the rails of bridges to provide glareless, full light. . . . Professionally, Dr. Spencer teaches advanced students in physics and electrical engineering three days a week at the University of Connecticut at Storrs, Conn., 88 miles from her home in Boston. For the balance of the week, she does research in applied lighting for Sylvania at its Salem, Mass., plant. With her husband, a professor in the same field at M.I.T., Dr. Spencer has published more than 200 papers and several books.

**Michael V. Herasimchuk**, XIX, metallurgical engineer on the staff of the operating vice-president, Bethlehem Steel Company, spoke at a meeting of the Springfield (Mass.) Chapter of the American Society for Metals, during October. Mike's topic: Vacuum Degassing of Steel. . . . **Franklin N. Bent**, X-B, was named plant manager of the Parlin plant of Hercules Powder Company, Parlin, N.J., last June. Frank joined the company in Parlin as a chemist in 1940, served the company there and abroad, and returned to Parlin in 1960 as assistant plant manager. . . . **Roland J. Boucher**, XVI-Grad, who received his undergraduate degree at St. Michael's College, Vt., before getting his master's degree in meteorology at M.I.T. in '39, won a fine write-up in the New Bedford Sunday Standard-Times of October 7 for his participation in an Educational Enrichment series of lectures for children in the New Bedford Area. The clipping added this sketch of Mr. Boucher: "He served as a meteorologist and forecaster for Pan American Airways and American Overseas Airlines, was a research associate and instructor at M.I.T., served with the U. S. Weather Bureau, and at present is working in the field of radar forecasting, for Allied Research Associates, in Boston. —**Oswald Stewart**, Secretary, 31 Birch Road, Darien, Conn.

## '40

**John Joseph** attended the Fourth Alumni Officers' Conference at Tech in September. John is a member of the Educational Council of M.I.T. for the Bergen County, N.J., area. . . . **Sam Goldblith** delivered a paper before the American Chemical Society's Division of Agricultural and Food Chemistry, also in September. His subject was the training of food scientists and technologists for world needs. . . . Dr. **S. Donald Stookey** has been awarded the 1962 John Price Wetherill Medal of the Franklin Institute in recognition of his development of glass-ceramics. His research work is responsible for the Pyroceram brand of glass-ceramics for Corning Glass Works. The value of his research work is attested to by 26 patents on inventions by him.—**Alvin Gutttag**, Secretary, Cushman, Darby and Cushman, American Security Building, Washington 5, D.C.; **Samuel A. Goldblith**, Assistant Secretary, Department of Food Technology, M.I.T. Cambridge 39, Mass.

## '41

In the news this month we find Professor **Fred T. Haddock**, Director of the University of Michigan Radio Astronomy Observatory. Fred has been sending rocket-borne instruments into outer space to measure radio noise of the Milky Way. Some of his instruments are reported to have been sent out 1,050 miles aboard a rocket launched from Wallops Island, Va. He reports that although the data should take several months for interpretation, he expects that the measurements will give him a better idea of the structure of this galaxy—the one in which our own star is found.

**Robert Blake**, Pan American Airways senior operations engineer, has been appointed executive vice-president of Ariana Afghan Airlines Company, Ltd., in Afghanistan. We learned this from a very interesting letter written by Bob to **D. Reid Weedon, Jr.**, which we are taking the liberty to copy here in toto as of general interest: "Dear Reid: Thank you very much for your prompt letter with the addresses of Alumni in India and Afghanistan. In attempting to get in touch with Mr. A. K. Aziz here in Kabul, I find that he has returned to the United States, where he is teaching at a college in Maryland. He is, incidentally, the younger brother of one of the honorary members of our Board of Directors. . . . Both Iran and Pakistan are also of interest as far as other Alumni are concerned. In some respects it is like the old American West, where anyone within a thousand miles was a neighbor. While the border with Pakistan has been closed for the past year, and remains so despite recent diplomatic efforts, it is still possible to drive from here to Peshawar through the Khyber Pass, and Ariana flights to Delhi continue to stop at Lahore. I am here both as an officer of Ariana Afghan Airlines Company, Ltd., and as head of the Pan

American Airways technical assistance team under contract with the U.S. Administration for International Development, the Royal Government of Afghanistan, and Ariana. As for Ariana itself, it is the Afghan national airline, offering domestic service to five cities within Afghanistan, and year-round international services to India, Iran and Lebanon. During the Haj many flights operate from Afghanistan to Saudi Arabia.

"For the past two years (since the closing of the border with Pakistan) we have run a special airlift throughout the fruit harvest to carry the crop to market in India, chiefly fresh grapes and pomegranates, dried fruits and, of all things, asafetida. This is now the only way the crop reaches Western markets; otherwise it goes to Russia, and Aeroflot also runs a fruit-lift to Tashkent. The Afghan fruit is among the finest I have tasted anywhere in the world, incidentally, especially the grapes and melons. The airline fleet today consists of six aircraft, DC-3, DC-4 and DC-6's. We are in the process of converting to an all-pressurized fleet, badly needed in this mountainous country. The Hindu Kush rises to 20,000 feet, with the only pass on one route at over 13,000. Jets as yet are still some years in the future, however. Kabul is at an elevation of 6,000 feet with a delightful climate. Visitors are welcome. Come on from Zurich next time you are there. Best regards. Sincerely, Bob." . . . We are sorry to report the death of **Walter M. Ennis, Jr.**, Baker Bridge Road, Lincoln, Mass. . . . Please keep the news moving by sending it to any one of the secretaries.—**Walter J. Kreske**, Secretary, 53 State Street, Boston 9, Mass.; **Henry Avery**, Assistant Secretary, 169 Mohawk Drive, Pittsburgh 28, Pa.; **Everett Ackerson**, Assistant Secretary, 16 Vernon Street, South Braintree 85, Mass.

## '42

In connection with my duties as development officer of the Institute, I have occasion to travel around the country and meet many Alumni, some of whom are members of our class. During the past month I had a delightful visit with **Charles H. Smith, Jr.** in Cleveland who, as many of you must know, is president of Steel Improvement and Forge Company. Charlie showed me around his plant, and I was most impressed by the giant forges I saw in operation. Large forges in operation present a most spectacular sight. I would think, however, it would take some time to get used to the thump, thump of these great machines as one can feel the shock waves travel through the ground at quite some distance from the actual forge. Charlie played a leading part in the Institute's Second Century Fund in Cleveland where he was our area chairman. . . . I also saw **Bob Fay** in his Cleveland office. Bob has also played an active part in alumni affairs and this year is one of the top officers of the local club. From the

size of his office and staff it is perfectly obvious that his legal work is keeping him very busy. Incidentally, I know that **Bob Fay** and **Bob Rines** are patent lawyers; are any other of our classmates in this profession?

I spent a very interesting evening with **Mort Goulder** and **Eric Wormser**. Mort, in addition to being director of Sanders Associates, is director of Corporate Marketing. He also has the title and function of corporate scientist. He has been with the company since its founding 11 years ago and is obviously interested and enthusiastic about his work with this spectacular growth company. He has five boys and one girl. . . . Wormser is vice-president and general manager of the Defense and Space Division of Barnes Corporation. He has been there 10 years and is an enthusiastic booster of the Virgin Islands, where he has traveled extensively on both business and pleasure. If any of you take a vacation in the Caribbean you might well get in touch with Eric who, I am sure, will be glad to advise you about traveling there. . . . **Jerry Coe** dropped me a note to let me know that **Paul Bruckman** lives in Mobile, Ala., and heads his own company, which sells industrial products throughout the Southeast. He apparently also is involved in a family business in England and Europe.

**Ted Eliot**, who has been in New York for nearly two years with Scientific Design Company, Inc., is involved in the reorganization of the M.I.T. Club of New York. He is assistant secretary. He is another classmate whose job involves much traveling. . . . I can't remember if this column has ever had the pleasure of announcing an engagement before, but I have a clipping which tells me that **Harry Heineman's** son plans to get married in December to Miss Judith Brainerd of Hartford, Conn. This may not be the first one of our children to be married, but surely we cannot have many in this category. . . . **Arthur Porter** has been appointed manager of quality control for the Container and Chemical Specialties Division of the Dewey and Almy Chemical Division, W. R. Grace and Company. He has been with the company since graduation. He will assume responsibilities for the manufacture of container sealing compounds, construction and rock products, chemicals, meteorological balloons and soda lime. . . . **John Finger**, who is associate professor of education at Brown University, has been given administrative responsibility for Brown's teacher training program. His principal research interest is in non-intellective measures of academic success. He received his doctorate from Harvard in 1952 and was a member of the faculty at Colgate before his appointment for the fall term at Brown. I shall see if I can get John to say what he means by "non-intellective measures of academic success" as I think we would all be interested in hearing more about this.

**Harry Remde** has been made head of the Basic Physics Research Section of Johns-Manville. Harry received his doctorate at Rutgers University in 1960. Some may remember that he also spent two years at Cambridge University in

England. His most recent program has included the investigation of electrical properties of asbestos fiber, heat transfer theory, and the use of expanded perlite in insulations. He has written a number of technical papers, chiefly in the field of ferrites. Harry and his wife became very interested in ceramics after the war, and I suspect that he has maintained his interest and has become a real pro at the potter's wheel. Do we have any others interested in ceramics? . . . My final note concerns **Bob Seamans** who received his master's degree with us in 1942. He is the associate administrator of NASA and serves under NASA administrator James Webb as the general manager of the space agency. The expanding role of NASA in the economy is a most impressive story. I have heard it said that by 1970 the accumulated interest on the amount spent for space activities will probably exceed the total cost of all education both public and private at all levels for one year.—**John W. Sheetz, 3d**, Secretary, Room 3-342, M.I.T., Cambridge 39, Mass.

## '43

These notes will reach you in January, bringing to mind, perhaps, the expression, "Where are the snows of yesteryear?" Of more immediate concern to your secretary is where are the letters of yesteryear, for, gentlemen, without your writings there are no notes, and our class news may be reduced to obituaries before long. Twenty years of newsworthy events have taken place, and over half of the class has yet to report. Arise ye sons of '43! Get ye back to M.I.T.! Don't forget the seventh of June will be upon us very soon. . . . It was a pleasure to hear from **Joe Mestier**, who wrote: "Many thanks for your card inquiring about my move from Michigan to Milwaukee. As you know, I was fortunate enough to be president of the Detroit M.I.T. Chapter for the 1961-1962 season, which pleasant assignment I had to relinquish when I was transferred by Allis-Chalmers Manufacturing Company back to our headquarters in Milwaukee. I am presently sales manager for our Industrial Systems Department, and I might add that my new job has many new challenges. I was under the impression that in order to see the world one had to join the Navy, but I now find that this is also possible by becoming sales manager of a department.

"My family, which includes four daughters, has relocated in Milwaukee, and three of them, being of school age, are busily trying to reorient themselves in their new school surroundings. Right now we are actively trying to help our eldest daughter decide which college she will attend next fall. It seems like only yesterday that I was making an application to M.I.T.—Lost Quarter Century! I have not yet had an opportunity to attend any of the M.I.T. functions in Milwaukee but I hope to do so before too long. My bride and I hope to visit our respective alma maters early next year—hers is Pine Manor Junior College."



. . . **John P. Longwell**, who received his doctorate with our class, was named director of Esso Research's chemicals research division. Credited with 14 patents, he has gained a reputation as an expert in combustion. . . . **Douglas L. Brooks**, of West Hartford, was appointed as vice-president of Travelers Research Center, Inc., where he will direct the mathematical sciences department, and statistics and operations research. First reunion mailings are scheduled for January, 1963. —**Richard M. Feingold**, Secretary, 10 North Main Street, West Hartford 7, Conn.

## 2-'44

I recently stopped in to see **King Cayce, II**, to find out if he had any news on some members of the class. He indicated that he would drop me a note, and said note has arrived. I will quote it in its entirety, since he does a much better job of writing than your secretary: "**Brent Anderson, II**, who started out in the class of 10-'44 and got lost in the military shuffle, called me the other day and I thought you might like to be current on his activities. Brent was president of the Anderson Company in Worcester, a manufacturer of wire brushes. From time to time, he would stop in and see us when we still lived in Cleveland and were in the manufacturing business. About a year and-a-half ago, he sold his interest in that business to an associate and since that time he has done a number of interesting things. One of these was to explore a glacier in Alaska under the auspices of one of Lowell Thomas' expeditions. Nancy and the children joined him toward the end. Recently, he has been forming a company called Reactions, Inc., which in effect is a consulting business to help companies perfect their distribution systems. . . . Brent also had news of another classmate. **William A.** (we called him "Stretch") **Pearson, XVI**, also started with our class and got lost to a V-5 program and wound up being a pilot. After the war, he came back to Tufts and later was an engineer with Royal Typewriter. Brent indicates he and his wife are now living in Bristol, Conn., where he is working with a spring manufacturer. . . . I tried to reach **Jim Mulholland, IX**, the other day and found he was in Japan.

"We have been having a lot of fun recently with a company called Pancake Kitchens, Inc. You may have seen these pancake houses in the New England area, and there are certainly a lot of them on the West Coast and in Florida. We have made a lot of money in our specialty food investments and this looked like a pretty good idea, so three of us got together and started a company. We were able to negotiate a contract with the Quaker Oats Company which gave us the right to use the name Aunt Jemima's Kitchens in the five-state area of New York, Pennsylvania, New Jersey, Connecticut and Massachusetts. Since that time, the Quaker Oats Company has been sufficiently pleased with

our performance to let us build some more in Florida and they have given us Eastern Canada. We have four more restaurants open at this writing and three more in construction and about 10 more in contract. We hope that when you see an Aunt Jemima's Kitchen on the Berlin Turnpike, south of Hartford, or in Albany, Syracuse, Binghamton, Mineola, Camden or Yonkers, you will stop in and try our wares." That is all for this month, I hope to have some news from some of the members of the class in both California and Florida for next month's issue. Also I have heard that there has been some planning to work towards the merger of the 10-'44 and 2-'44 classes. With any luck I will have some more information on this in my next notes. — **P. M. Heilman**, Secretary, 30 Ellery Lane, Westport, Conn.

## 10-'44

Two important promotions were reported in the financial and business news pages early in 1962 and are recorded here now with apologies for the delay. **Bruce Fabens**, who has been associated with Lamson and Sessions Company, Cleveland, since 1948, was elected secretary of the company after having previously been made special assistant to the president. . . . **Dewey Nelson** was elected vice-president of FMC International, a division of FMC Corporation, formerly known as Food Machinery and Chemical Company. He will direct all exporting, foreign manufacturing, and licensing of FMC chemicals. . . . On a speaking trip to the West Coast recently for Carnegie Tech, I had the opportunity to spend a pleasant weekend with **Cort** and **Doris Ames** and **George** and **Clara Quisenberry**. Cort has been active for M.I.T. as regional chairman for the San Francisco Bay area of the Educational Council, and Quiz is the local representative for Palo Alto. Quiz has taken over much of the managerial responsibility for the large packaging equipment sales agency of which he is now part owner. Cort continues to extend his professional management consulting responsibilities with McKinsey and Company, and it was interesting to learn how active that firm has become in the use of new management sciences. . . . Quiz reported having been in touch with **Stan Smock** recently; Stan still lives in Dallas and is establishing a ranch in Colorado, presumably for business and pleasure.

Changes of address reported from the Alumni Office include: **F. Ryder Amthor, Jr.**, now in Manitowoc, Wis.; **Ian B. H. Bennett** in Garland, Texas; **Edward M. Coan**, from Riverside, Calif., to Cocoa Beach (Cape Canaveral), Fla.; **Richard F. Cross, 3d**, now in Orange, Calif.; **Warren J. Harwick** from Burlington, Vt., to Schenectady, N.Y.; **Jim Healy** in Paramaribo, Surinam; **Al Hildebrandt** in Chamblee, Ga., with the Kingsberry Homes Corp.; **Dr. John A. Hornbeck**, from Summit, N.J., to Washington, D.C.; **Charles P. Loucks**, from Wilmette, Ill., to Houston; **Clifford H. Matson, Jr.**,

from Cincinnati to Valley Forge, Pa.; **Robert H. Mayne**, now a professor of physics at Villanova University; Lieutenant Commander **Art Plaut**, now back in the United States and living in Oxnard, Calif.; Commander **Carl R. Seitz** from San Diego to Boston on the staff of the Public Works Office, First Naval District; and **Greg Walsh** from Morgan City, La., to Houston with Engineered Coatings, Inc. . . . Reminder—Mark your long range calendar now for the June, 1964 20th Reunion.—**Kenneth G. Scheid**, Secretary, 5634 Northumberland Street, Pittsburgh 17, Pa.

## '46

**Ned Tebbetts** has recently been promoted to assistant group actuary by the New England Mutual Life Insurance Company. After M.I.T. Ned received his master's degree from the University of Michigan. He joined New England Life in 1954. He is a fellow of the Society of Actuaries. . . . **David C. Sherrick** has been appointed manager of technical liaison of STELMA, Inc. STELMA, located in Stamford, Conn., designs and produces digital communications equipment relating to data transmission over wire and radio circuits. Dave was formerly Washington technical director of the Kleinschmidt division of Smith-Corona Marchant. Dave is a member of the IRE, the AIEE, and the Independent Telephone Pioneer Association. He is a member of the AIEE Committee on Telegraph Systems and the U.S. Preparatory Committee of the International Consultative Committee on Telegraphy and Telephony. . . . **Donald Hurter**, manager of the aircraft division of Standard-Thomson Corporation, was elected a vice-president of that corporation last spring. Don joined Standard-Thomson, manufacturer of controls and control components for the aircraft, automotive and home appliance industries, two years ago. He has devoted most of his time to the development, engineering and marketing of the firm's aircraft products, which are mainly heat exchangers and valves.

**William J. Casey** has been appointed vice-president of Amsted Industries International, S.A., foreign sales and licensing subsidiary of Chicago-based Amsted Industries, Inc. Bill has been with Amsted for 16 years. In his new job he will be responsible for the international sales and licensing of all Amsted railroad product lines. Bill is a member of the American Society of Mechanical Engineers, International Trade Club of Chicago, Western Railway Club, Chicago Athletic Association, and M.I.T. Club of Chicago. He is married, has one child, and lives at 622 Mulberry Place, Highland Park, Ill. . . . **Roger F. Stemen** has been appointed technical director of Mitco, Inc., Grand Rapids, Mich., an industrial water conditioning company. Roger is a registered engineer and a member of the American Water Works Association. . . . **Richard J. Steele** has been elected vice-president of the West-

ern Division of George Fry and Associates, a management consulting firm. Dick is chairman of the Business and Industrial Consultants Committee of the Los Angeles Chamber of Commerce, and lives at 15519 Talbot Drive, La Mirada, Calif. . . . **Allan L. Bralove** has been promoted to vice-president-operations of Documentation Inc., Bethesda, Md. After receiving his B.S. in chemical engineering from M.I.T. Allen earned his master's, also in chemical engineering, in 1947. He has been vice-president and general manager of the Shoreham Hotel, Washington, as well as vice-president in charge of engineering for the Electrofile Corporation. . . . While on the subject of promotions I shall quietly announce my own job change from section head, GSE, to assistant chief engineer for Inertial Components Design, Aeronautical Division of Minneapolis Honeywell Corporation, responsible for the design of precision inertial devices as well as new and exotic reference system components.

**Louis B. Wadel** has recently become director of applied science for Electronic Data Systems Corporation, a Dallas, Texas, firm engaged in engineering and commercial computer application consulting and rental of computers. . . .

**Norbert E. Smith, Jr.**, who received his B.S. in 1946, and his M.S. in 1948, and his marine mechanical engineer degree in 1955, received his doctor of science degree in the School of Naval Architecture and Marine Engineering, M.I.T., last June. His doctoral thesis was "Method of Predicting Adequacy of Piping Systems Subjected to Shock Loading." Norbert lives in Noank, Conn. . . . **Dominic Amara** was design co-director of the F104-G Infra-red Gunsight Sensitivity Checker, a sensitivity checker for flight readiness of the F104-G armament system, designed at the California Division, Lockheed Aircraft Corporation, and recipient of the "Award of Merit" at the 1961 WESCON show. . . . **Professor Stephen H. Crandall** taught Part II of a two-part sequence course on dynamic systems last spring at M.I.T. . . . That cleans up the in-basket for the month. Hope you will remember your poor, struggling secretary better this year than you did last. Just a brief note will do.—**John A. Maynard**, Secretary, 25 Pheasant Lane, North Oaks, St. Paul 10, Minn.

'48

While these columns are not intended for editorial notes, I can't resist commenting on the encouraging influx of first-rate personnel into important government positions. The November issue of Technology Review reported that Dr. J. Herbert Holloman, '40, was appointed assistant secretary of Commerce for Science and Technology. Now we have the pleasure of reporting that **Robert L. Stern** has moved to Washington with wife Jinny and children Amy and Charles to accept the post as Special Assistant to Dr. Holloman. Bob's responsibilities center on the

development of new federal programs which optimize the use of technology in industry and educational institutions. Bob writes, "There is a lot of excitement surrounding this new program and a lot of work ahead." . . . **F. Mansfield Young**, President of Adage, Inc., manufacturers of data processing devices in Cambridge, admonished industry in a "Boston Herald" interview. He said that industry accepts incompetence to such a degree that routine performance is considered brilliant. "To meet national goals we need more old-fashioned pride in accomplishment." . . . Assistant Secretary **Harry Jones**, too modest to announce his recent promotion, sent me some clippings and these words, "As Manager of Market Research, I am now in Plainfield, N.J., with Mack Truck. I am involved with strengthening the market research phase of Mack's interest. I now chair the College on Long-Range Planning for The Institute of Management Sciences."

Other recent promotions include: Dr. **Dean S. Ammer**, named research professor in management and acting director of Northeastern University's Bureau of Business & Economic Research. . . .

**Ralph L. Wentworth**, appointed manager of Chemical Engineering in Dynatech Corporation's Engineering Research Department in Cambridge; and **George R. Pepin**, elected president of Crescent Welders' Supply, Inc., West Springfield, Mass. . . . Captain **Raymond E. Peet** now commands the "U.S.S. Bainbridge," world's first nuclear-powered guided missile frigate. . . . Colonel **Nils M. Bengtson** is the new commander at Duke University's Army Research Office. . . . and Colonel **Pierre V. Kieffer, Jr.**, has assumed Section Chief duties for Third Army at Fort McPherson, Ga. . . . The September Alumni Officers' Conference brought a record attendance from class of '48 representatives. Participating were, William H. Bertolet, 3d, Halton M. Beumer, Martin S. Billet, Robert H. Bliss, Kenneth S. Brock, J. David Cist, Harry G. Jones, John R. Kirkpatrick, Leonard C. Maier, Jr., Harry H. Meyer, Robert R. Mott, Robert K. Peterson, John T. Reid, Wilfred Roth, and John M. D. Walch.—**Herbert S. Kindler**, Assistant Secretary, 128 Elatan Drive, Pittsburgh 16, Pa.; **Richard H. Harris**, Secretary, 26 South Street, Grafton, Mass.; **Robert R. Mott**, Assistant Secretary, Box 113, Hebron, Maine; **Harry G. Jones**, Assistant Secretary, 94 Oregon Avenue, Bronxville, N.Y.

'49

Season's greetings to all 1949ers from your over-travelled class secretary. When you read these lines, I will very probably be involved with my tenth transatlantic trip since March, 1962. I am writing these few lines during eight days at home sandwiched between two two-week trips. I now know what the proverbial sparrow (caught in the badminton game) feels like. . . . Only two items from the clipping service this month and no letters at all. From the Cleveland Plain Dealer, comes an article

on the merger of two investment security organizations and offices in Youngstown which mentions **David Tod**, XV, as manager of the consolidated offices for Merrill, Turben and Company, Inc. of Cleveland. Tod has been manager of the Merrill, Turben office since 1959. He is a member of the founding family of Youngstown and a great-grandson of the governor of Ohio during the Civil War. After graduation, he worked with Youngstown Sheet and Tube Company and Sharon Steel Company before joining his present firm in 1955.

From Vermont comes word that Dr. **Frank G. Lane**, VII, is an instructor in biology at Middlebury College. After graduation from M.I.T., he taught at Middlebury for two and one-half years, worked at Arthur D. Little in the Operations Research Group for a period, and then entered and graduated from the University of Vermont School of Medicine. . . . That's all for this month. Would you like to see your name and achievements emblazoned imperishably on these pages, exciting the admiration, curiosity, or green-eyed envy of your old friends from school? If so, just write.—**Frank T. Hulswit**, Secretary, 14 Nadine Road, Saxonville, Mass.

'50

Happy New Year! Good health and good luck to us all in 1963. . . . **Mitch Hannoosh** and Mrs. Hannoosh have reported on the progress of Mitch's company, Polystructures Inc. Mitch was at Lincoln Laboratory, involved in the design and fabrication of large plastic domes for protecting radar antennas from environmental conditions. Based on that experience, Mitch started Polystructures as president about a year ago and reports that private enterprise is no snap, but he and Polystructures are making progress.

Company executives, 1950 brand, were very much in evidence on Alumni Day. Better late reporting, than never!) **Lou Mager** is executive vice-president of U. S. Dielectric, Inc. in Worcester, which, among other things, is developing transfer molding techniques for epoxy plastics. Small business management has been Lou's preoccupation since graduation. He teathed in one of the M.I.T. planetary firms between graduation and his present position. . . . The financier contingent of the class, represented this year at M.I.T. by **Frank Conlin**, reminded me that **Mel Gardner** is back from San Francisco and is located with a stock exchange firm with a One Wall Street address. . . . **Bob Snedeker** stopped at **Bob Mann's** office at Tech while 10th Reunioning with his wife at Wellesley. Bob is with DuPont and in the process of a move from R & D to responsibility for film production.

**Ed** and Mrs. **Dmytryk** and **Jack Weaver**, are all in the construction business; Jack, with an intown Boston firm, and Ed, located at Northboro, Mass., exchanged commentaries on the state of construction. Both of their firms seem to specialize in school construction, of

which there is plenty to go around. . . . Class agent **Bob Cesari**, also present at the Alumni Banquet, reported on the state of patent law. . . . New addresses include: **John G. King**, Associate Professor of Physics, 5811 Elm Street, Lisle, Ill.; **David H. Matheny**, 6815 Kolmar, Lincolnwood 46, Ill.; **Richard A. Meyer**, 6 Ralph Road, Marblehead, Mass.; **Leroy E. Layton**, 7 Ruth Street, Beaumont, Texas; Captain **Joseph E. Volonte**, 2914 Yorktown Boulevard, Arlington 7, Va.; **Wilbur A. White**, 62 Sunset Drive, White Plains, N.Y.; Dr. **Francis J. Zimmermann**, 325 Reeder Street, Easton, Pa. . . . I hope you will contact any of your friends that you identify in these address changes. Meanwhile, write me, please. . . . It seems to me that if you read this stuff, you ought to write some of it. So don't give me your 'guff' . . . give me some 'stuff.' —**Gabriel N. Stilian**, Secretary, American Management Association, 1515 Broadway, New York, 36, N. Y.

## '53

Just bits and pieces. . . . One of our classmates, **Charlie Block**, has followed an interesting path that has led him to the banking industry. It all seems somewhat unlikely in view of his degree in Course XVIII, and his former job at the M.I.T. Instrumentation Lab, which involved setting up the Lab's first digital computer and working on inertial guidance for the Atlas missile. At any rate, after serving as an electronic data processing consultant, he was hired by Chase Manhattan Bank to head the Customer Services and Electronic Research team which consists of programmers, systems analysts, and tabulating specialists. . . . Last summer, **Richard Eckstrom** was a co-author of a paper entitled "Information Processing in Hybrid Computing Facility" that was presented at the International Federation for Information Processing Congress in Munich. As I understand it, the paper discussed aspects of the hybrid (combined digital and analog) computer system being utilized at the IBM Space Guidance Center, Owego, N.Y. . . . **Eric Kolm**, now president of U. S. Sonics, apparently is making headway with a recent invention of his firm (the item is a solid-state, ceramic, i-f filter which will replace the wire-wound mechanical i-f filter presently used in radio sets); a licensing agreement with Stemag of West Germany gives the latter firm the exclusive right to manufacture the filter in West Germany, and the right to sell the new component throughout the European Common Market, England and its dominions. Sounds good!

Two reports on military officer classmates. **Arthur Becker** (now a major in the Army) recently completed the associate course at the Army Command and General Staff College, dear old Fort Leavenworth, Kansas; he is presently assigned to the U. S. Army Engineer District, Sacramento, sunny California. . . . **William McKenna** (a light colonel) completed the U. S. Air Force course for academic instructors at Maxwell AFB, Ala.,

and has been reassigned to the Air Force Institute of Technology a Wright-Patterson AFB, Ohio, as a professor of mechanical engineering.—**Martin Wohl**, Secretary, 3724 Cumberland Street, N. W., Washington 16, D. C.

## '55

Life is quite different for your Wilmington correspondent since the arrival of Bruce Lencie **Venarde** on September 14. Once again a new career, and this one promises to be more lasting and far more fascinating than previous ones. (You can avoid hearing about the young man by keeping us supplied with other things to write about!) Some of our news sheets written last spring are showing their age, but are still newsworthy. . . . **Carl Seils**, Virginia, and their two boys are living in Frederick, Md., where Carl is an expeditor in construction work for the Joseph F. Neber Company. . . . **Frank Buck**, also father of two sons, and Betty live in Bloomsburg, Pa.; he is with the U.S. Radium Corporation and does design and development engineering on radioactive products. . . . **Ron Spaulding** wrote that he would soon be a partner in his business, a two-man company, Clarkson Engineering Company, where he is the sales engineer. He, Nancy, and their daughter make their home in Niles, Ill. . . . **Eddie Greene** writes that **Bob** gets home to his harem (Eddie plus three little girls now) in Charlottesville, Pa., only on week-ends, traveling during the week throughout the United States and Canada as vice-president in charge of sales of Ovens, Inc. . . . **Tony Merz** informs us that the "Spouse's first name" blank is still not applicable. He keeps occupied at General Precision as a staff analyst, having had a publication in the Journal of the Aerospace Sciences in April. In addition he is teaching a senior mechanical engineering course at Fairleigh Dickinson University. . . . On the other side of the world this year are **John Winchester** and Ellen and their daughter. John is on leave from his assistant professorship at M.I.T. in the Department of Geology and Geophysics, serving as Fulbright lecturer to Taiwan. . . . **Andre Deprez** writes that he travels extensively in Europe, promoting better chemical engineering, as assistant to the vice-president of European Affairs of Scientific Design. He lives in Paris with Jocelyn, his two boys and a girl. . . . **Norry Hersey** is still in Germany, senior systems analyst with the European Exchange System in Nuremberg. He and Diana have a young son born the last day in May. Norry says he still sees **Phil Gruber** (whom we reported as having returned to this country on the basis of a change of address slip; Norry assures us he hasn't!) and **Ben O'Brien** in Munich occasionally, but that he missed seeing **Jim Kennedy** in Antwerp, where Jim spent three months on a job with Stone and Webster. We really welcome newsy letters like that one, and we share Norry's wondering what has become of some of the rest of you people!

**Gerald Maloney** received his M.B.A.

from Rutgers in June. He and Ruth and three sons live in Madison, N.J. . . . **Stephen Weingram** received the Ph.D. degree in math from Princeton. . . . **Herman Jacobs** is a staff executive in industrial engineering with Norman Jaspas Associates in New York City. He and wife Caroline and daughter live in downtown New York City. Bud is also permanently associated with N. V. LinMij in Holland as a consultant, which provides a trip to the continent yearly, among other things. . . . **Tom Marlow** is a hydrolic design engineer with the Bechtel Corporation in San Bruno, Calif. He is now a registered engineer in California, which still doesn't solve his crabgrass problems! . . . **Doug** and **Barbara East** are faculty residents in Bexley Hall in addition to his position as administrative assistant to the president of M.I.T. . . . **Ed Ehrlich** is director of industrial engineering with Western Publishing Company. He was recently appointed M.I.T. Educational Counselor for Poughkeepsie, N.Y., where he, Janet, and 2.5 girls make their home. (How can you be so pessimistic about having another girl, Ed?). . . . **Jim Eacker** our Class President, has recently been appointed to the position of executive officer of the M.I.T. Mechanical Engineering Department. . . . **Bob** and **Anita Craven** announce the addition of Christopher Anthony during the summer. . . . **John Milsom** is Abitibi Professor of Control Engineering of McGill University in Montreal. . . . **Harold Langley, Jr.** has been named to the faculty of the University of New Hampshire as an associate professor of civil engineering. . . . **Charles T. Pre-witt** has joined the research staff of Dupont's Central Research Department in Wilmington.—**Mrs. J. H. Venarde**, 2401 Brae Road, Arden, Wilmington 3, Del.; **L. Dennis Shapiro**, 24 Concord Avenue, Cambridge, Mass., Co-Secretaries.

## '56

Don't let the new postage rates discourage you from keeping in contact with your classmates. . . . **J. Ray Bowen** has finished his doctorate at the University of California, Berkeley, and now has taken his family to Cambridge University, England, for postdoctoral work sponsored by the NSF. . . . **Ken Cady** is now an assistant professor at Cornell. . . . **Fred** and **Fritze Cullick** announce the birth of a son, Alexander Joseph, last August. Fred is teaching and consulting at Caltech. . . . **Irwin Dorros** writes that he has recently been promoted to head of Pulse Code Modulation Department at Bell Labs in Murray Hill. In the past he has worked on the electronic telephone switching system in Morris, Ill. Irwin has also been working part time on his doctor's degree at Columbia University. He and Janet have two children, Mark and Gail. . . . **Kent duPre** is working in the Psychiatry Department of Metropolitan Hospital in New York. . . . Dr. **Robert Holden** and his wife with their children, Gregory, Bradley, and Dean, have moved to Vermont. Bob has joined the Vermont



Department of Health as a representative of the U.S. Public Health Service. . . . **John MacLaughlin** is an electrical engineer at the Naval Research Laboratory in Washington, D.C. . . . **Wendyl Reis** has finished his 10 months' Berlin emergency tour in the Army and is back at Sprague Electric. . . . **John Stelling** is doing operations research work for Price, Waterhouse in New York. He recently attended an operations research convention in Philadelphia and crossed paths with our Alumni Council representative, **Warren Briggs**. . . . If you think this article is short, ask yourself why.—**Bruce B. Bredehoff**, Secretary, 1094 Center Street, Newton Center 59, Mass.

# '57

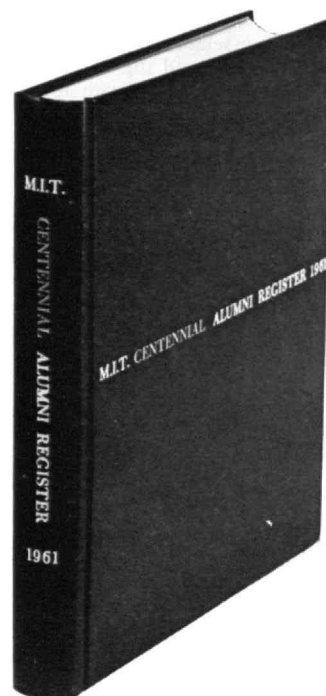
As I mentioned last month, **Gary Dischel** gave me a lead on a story about **Harry Flagg**, one of our more colorful classmates. I made numerous attempts to chase it down and had almost given up when a letter arrived last week from Harry himself. Before quoting to you from Harry's letter, it may be best to fill you in on some of his activities since graduation. After a year in Seattle with Boeing, Harry joined the Navy. He was commissioned an officer in 1958 and stationed for the next three years near Honolulu. Last winter Harry, with a knapsack on his back and a ukulele in hand, made a seven months' walking and hitchhiking tour of Europe and the Middle East. This spring he returned to Hawaii and tried to start a boys' camp. His letter described the current scene: "Lots has been happening out here—but where to begin? The camp was a good idea, but I didn't have the cash to see it through. For the time being I am holding it in abeyance. Last May I struck out in the consulting field and am now having a ball acting as a tax consultant for small businesses. I'm aligned with a nationwide firm, Simplified Tax Records. I deal with small companies: step into their business; overhaul or revamp their bookkeeping, internal controls, and inventory system; guide them through financial problems, etc. The real emphasis is on tax work and tax saving. Frankly, it's been a huge success in every sense. Business is booming with more customers than I can handle, but who's complaining? In September I picked up a small apartment hotel in Waikiki Beach and have been having fun running it ever since. The finances in the deal are almost unbelievable; I'm using my Volkswagen for collateral. Nice eh? I find myself in the amazing position of teaching nuclear power to the Naval Reserve Officers (at the graduate level). If you remember my interest and abilities in technical subjects you'll see why this is so riotous." Harry also mentioned that **Hal Smith** is an assistant professor of nuclear reactor engineering at the University of California at Berkeley and that **Howard Schumacher** is in Istanbul, Turkey, on "something hush-hush" after finally getting out of the USAF. . . . **Don Smith** has been named one of the

sixteen Baker Scholars at the Harvard Business School. . . . **Paul Coble** in a recent letter informed me that he is now a patent attorney with Hughes Aircraft in Los Angeles. He also noted that **Louis Baudino** is working for Consolidated Electronics in Pasadena and that **Alan Kotliar** is in Toronto, Canada, with a subsidiary of Basic Products Corp. . . . **John Armitage** recently wrote from California: "I'm working for IBM in San Jose, doing research on modern optical systems, and am enjoying it very much. My wife (Susan Hodge, Wellesley, '59) and I have been here about 10 months and are thoroughly enjoying the change from Boston. There are no children in evidence as yet; Susan is working for a very interesting group at the VA hospital in Menlo Park which is studying schizophrenia. We have become dedicated to the Western outdoors (the mountains, not the patio) and have been doing a fair amount of backpacking in the Sierras. We vacationed this year in the state of Washington, visiting the fair, which we enjoyed (I believe this may place us in the minority), and packing through unexpected snowstorms in the Cascades. . . . **Sam McIntosh** is still goofing-off at Stanford, but will be getting his Ph.D. soon. He's foot-loose and enjoying himself. . . . **Frank Ching** is in Palo Alto also, working for a splinter offshoot from ITEK. He seems to be going great guns too."

Next month I plan to devote most of the column to a report on the activities of classmates here in the Boston area. In the meantime I would appreciate your dropping me a note to bring me up to date on what you are doing.—**Frederick L. Morefield**, Secretary, 17 Everett Street, Cambridge, Mass.

# '58

Our esteemed class secretary, in a fit of madness, asked the class president to write a column for the Class News section. Yours truly, in a fit of even more sublime madness, accepted. Just as I sit down to write this I find the November issue of *The Technology Review* in my mail and discover that friend **Peterson** has stolen half of my news items. Some folks are just plain sneaky. . . . The information about **Dan Holland** was one partially stolen item. Dan tells me that he married Pat Kramer of Lakewood, Ohio, on September 2, 1961, and now has an income tax deduction named Joseph Eugene, born June 16, 1962. According to Papa, negotiations are already under way with the New York Giants and the Washington Redskins for the use of the talents which the young'un is bound to possess. Dan warns that he does a lot of traveling in his work with the Tech Industrial Liaison Office and a lot of freeloading off former classmates. . . . One day while working in the law library at Edgewood Arsenal, Md., (formerly known as Army Chemical Center), I looked up and found **Art Aronson** at the door. Art, who spent two years at the then Chemical



# 521

pages

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living Alumni

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each with Class numerals, all M.I.T. degrees received, and address, position held, and firm name wherever possible.

# 12,646

present and former members of the Institute Faculty and Staff.

(from Aalto, Alvar H. H., 1940-41, 1946-51, to Zymelman, Manuel, '56, 1956-58).

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(from the Alumni Association, Room 1-290, M.I.T., Cambridge 39, Massachusetts).

Center was pulling his two weeks of active duty for the year. He is in graduate school at Rensselaer Polytech.

Recently I attended the meeting of the M.I.T. Club of Baltimore with Joe Goodell, '59, and, in looking around the room for a contemporary-looking face, I found **Richard Stauffer** and his wife. Richard is plying the architectural arts in Baltimore now. . . . **Murray Kohlman** writes from B'nei Brak, Israel that he is still engaged in studies to become a rabbi. Murray has been in Israel for over three years now, and two months ago, he reports, "I was married to a very nice girl from Paris who was working here as a teacher." . . . **Sandy Nobel** writes from Buffalo that he is still with the Harry R. Deffer Corporation, and is currently serving as manager of that outfit. Anyone who needs industrial carbon raw materials will find Sandy ready to help out. Sandy's wife Margie (one of the Simmons clan) taught in Buffalo last year, and one of her fellow faculty members was Judy Farrow, wife of **Frank Farrow**. Frank received his master's in electrical engineering from Cornell and is now with Cornell Aeronautical in Buffalo.

Mellow, timid, retiring **Lew Cohen** writes in his usual shy fashion that he is pursuing a doctorate in geochemistry at Scripps Institution of Oceanography. Lew's letter is headed "Department of Earth Sciences, University of California, San Diego," and I assume that is the parent organization. Still unmarried and still uninitiated in the mysteries of military service, Lew managed to get to Europe this past summer via a Scripps' research cruise. Lew has been conscripted by **Toni Deutsch Schuman** for help on the California end of the up-

coming 5th Reunion, planned tentatively for San Francisco. Closing his letter with a tribute to his classmates, Lew expresses interest in reading this column "to find out what's happening to all the other clods." . . . Yours truly is still a lowly first lieutenant in the Army, and will be until September 1963, after which law practice in Washington, D.C., beckons. Currently boasting two offspring, both female, and a Welsh terrier, who is a cousin of "Charlie" Kennedy, I'll be glad to hear from any of you who will drop me a line: Lieutenant **Robert Jordan**, c/o Post Judge Advocate Office, Edgewood Arsenal, Md.; and if enough of you write and Secretary **Peterson** has a further lapse of good judgement, perhaps I will be able to put together another column sometime in the future—**Robert Jordan**, Visiting Correspondent; **Cornelius Peterson**, Secretary, 4 Rambling Brook Road, Upper Saddle River, N.J.; **Antonia D. Schuman**, Western Associate, 22400 Napa Street, Canoga Park, Calif.; **Kenneth J. Auer**, Midwestern Associate, 12955 Harlon Avenue, Lakewood 7, Ohio; **William G. Daly, Jr.**, Eastern Associate, 125 White Street, Waverley, Mass.

## '59

I have not received any mail from anyone in our class in over a month. I hope everyone will drop me a line this month. Please note, your secretary is now working for the Department of Defense and has a new address.—**Robert Muh**, Secretary, Arlington Towers M-424, 1111 Arlington Boulevard, Arlington 9, Va.



Last October these M.I.T. members of Kappa Sigma and Phi Kappa Theta planted dogwood trees along Boston's Commonwealth Avenue. The same Saturday, five other fraternities pitched into outdoor chores in The Fenway's park areas.

## '60

A few marriages items came to me by way of newspaper clippings. **Bob Steinberg** married Eleanor Busick in Washington, D.C. in late August. Bob is with the Board of Governors of the Federal Reserve System. . . . **Tom Crystal** married Ann Tarlau in early September. Tom is now an associate member of the technical staff of the Bell Telephone Laboratories in Murray Hill, N.J. . . . **Tom Christy** married Ann Brown, also in early September. The Christys are now living in Silver Spring, Md. . . . I received a nice letter from **Monty Wells**. He reports that he is now teaching in the Newton, Mass., high school after getting a M.A. in teaching at Harvard. Monty says that "Tech had better keep moving as I'm teaching things sophomore year in high school that I didn't get until my senior year at Tech." . . . **Herb Fox** reports that he is now a doctorate candidate at Brooklyn Poly, having obtained a master's there in June. Herb is married to the former Dorothy Alg, a Brooklyn College graduate, '62. . . . Paul Young and Norton Starr, cited in the November issue for NSF fellowships, are not members of the Class of '60. It seems our wires crossed. Two other items of interest: **Burgess Rhodes** has been appointed instructor in mathematics at Lehigh University. Burgess is presently enrolled in the graduate school there. . . . **Dave Butterfield** completed an amphibious training course, courtesy of the Army in September. At last report Dave was stationed in Fort Riley, Kansas. . . . Any news as to your activities would be appreciated.—**John B. Stevenson**, 106 Ellery Street, Cambridge 38, Mass.

## '61

An otherwise lean month was relieved by the appearance of a letter from **Ed Soan**, who writes: "On looking over The Review for November I noticed that our class was not represented. If the reason is lack of news I'm supplying some herewith. In September I was released early from active duty with the Army for the purpose of attending graduate school at Columbia University, where I am presently going for an M.S. in electrical engineering. Also in September, my engagement was announced. My fiancée is Maybeth Fandel, Emmanuel College, '63, of West Roxbury, Mass. Our wedding is set for October 12, 1963." Thanks for the line, Ed; anybody else out there? . . . **Joe Skendarian** and his bride, the former Susan Niles, are now residents of Berkeley, Calif., after a honeymoon trip to the West Coast via the Grand Canyon. Among the bridesmaids were sisters of both the bride and groom; ushers included T. J. Lageman, **Tex Ritter**, **Mel Cornillaud**, and **Bud Martin**. Luck and best wishes to Joe and Susan.—**Joseph Harrington, 3d**, Secretary, M.I.T. Graduate House 212-A, 305 Memorial Drive, Cambridge 39, Mass.

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